MTNC040521A1
B19 Canada: B05

# Service Manual

Color Television

Simplified

## CT-30WX54J / CT-30WX54UJ / CT-30WC14J / CT-30WC14UJ

GN1

**Please file and use this manual together with the service manual for Model CT-32HL44J, Order No. MTNC040418C1 .**

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**⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

**IMPORTANT SAFETY NOTICE**

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

# 1. Safety precautions

## General guidelines

**An isolation transformer should always be used during the servicing of a receiver whose chassis is not isolated from AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injuryfrom electrical shocks. It will also protect the receiver from being damaged by accidental shorting that may occur during servicing.**

**When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)**

**Always replace protective devices, such as fish paper, isolation resistors and capacitors, and shields after servicing the receiver. Use only manufacturer’s recommended rating for fuses, circuits breakers, etc.**

**High potentials are present when this receiver is operating. Operation of the receiver without the rear cover introduces danger for electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautionswhen servicing high voltage equipment.**

**Extreme care should be practiced when handling the picture tube. Rough handling may cause it to implode due to atmospheric pressure. (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, usesafety goggles and heavy gloves for protection. Discharge the picture tube by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. dag ground lead) to the anode with a wellinsulated wire or use a grounding probe.Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to x ray radiation.**

**The test picture tube used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provide shielding for the tube viewing area against x ray radiation as well as implosion. The magnetic shieldlimits the x ray radiation around the bell of the picture tube in addition to the restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling 50kV without causing x ray radiation.**

**Before returning a serviced receiver to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. Do not use a line isolation transformer when testing.**

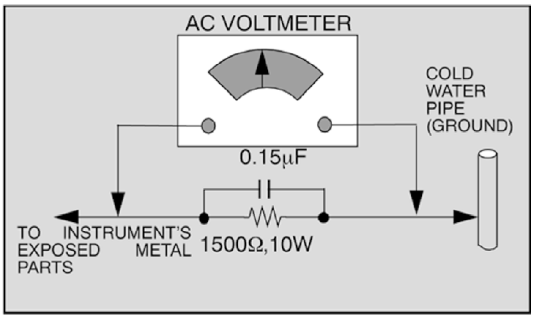
## Leakage current cold check

**Unplug the A.C. cord and connect a jumper between the two plug prongs.Measure the resistance between the jumpered AC plug and expose metallic parts such as screwheads, antenna terminals, control shafts, etc. If the exposed metallic part has a returnpath to the chassis, the reading should be between 240k Ω and 5.2M Ω . If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.**

## Leakage current hot check

**Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check.**
**Connect a 1.5kΩ 10 watt resistor in parallel with a 0.15 μ F capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.**
**Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.**
**Repeat the procedure and measure the voltage present with all other exposed metallic parts.**
**Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson model 229, Sencore model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 0.5 milliamp. Ifany measurement is out of the specified limits, there is a possibility of a shock hazard and the receiver must be repaired and rechecked before it is returned to the customer.**

**Hot check circuit**



## Insulation test

**Connect an insulation tester between an exposed metallic part and A.C. line. Apply 1500VAC/ 60Hz for 1 second. Confirm that the current measurement is 0.5mA ~ 2.0mA. Repeat test with other metallic exposed parts.**

## X ray radiation

**WARNING**
**The potential source of x ray radiation in the TV set is in the high voltage section and the picture tube.**

**NOTE**
**It is important to use an accurate, calibrated high voltage meter.**

**Set the brightness, picture, sharpness and color controls to minimum.**
**Measure the high voltage. With a 480i signal the high voltage should be 30.5kV ± 0.3kV and with a 1080i signal the high voltage should be 30.5kV ± 0.3kV. If the upper limit is out of tolerance, immediate service and correctionis required to insure safe operation and to prevent the possibility of premature component failure.**

### Horizontal oscillator disable circuit test

**This test must be performed as a final check before the receiver is returned to the customer. See horizontal oscillator disable circuit procedure check in this manual.**

# 2. Service notes

**NOTE**

**These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.**

### Leadless chip component (surface mount)

**Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chips capacitor or resistor board solder pads may have holes through the board,however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.**

**Chip resistor have a three digit numerical resistance code, 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6k Ω resistor, 0 = 0 Ω (jumper).**

**Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.**

**Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.**

**Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.**

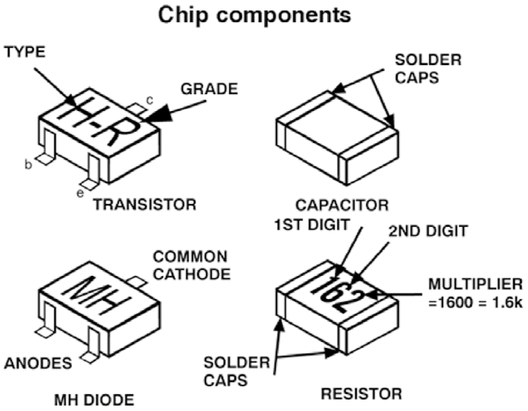
### Component removal

1. **Use solder wick to remove solder from component end caps or terminal.**
2. **Without pulling up, carefully twist the component with tweezers to break the adhesive.**
3. **Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.**

### Chip component installation

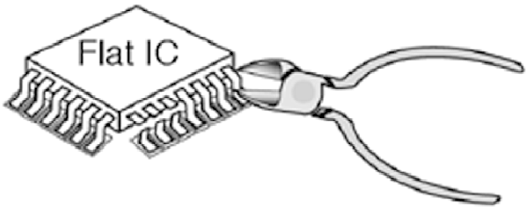
1. **Put a small amount of solder on the board soldering pads.**
2. **Hold the chip component against the soldering pads with**

**tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.**

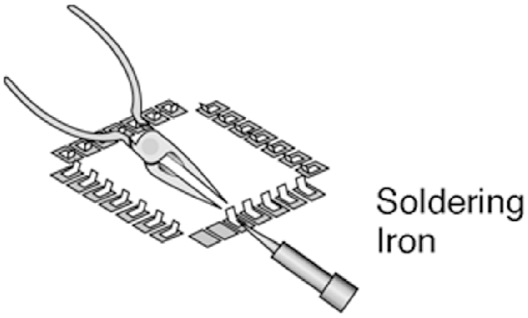

Chip components
TYPE
GRADE
c
b
e
H-R
TRANSISTOR
SOLDER
CAPS
CAPACITOR
1ST DIGIT
2ND DIGIT
COMMON
CATHODE
MH
ANODES
MH DIODE
162
MULTIPLIER
=1600 = 1.6k
SOLDER
CAPS
RESISTOR

How to replace flat ic (required tools)

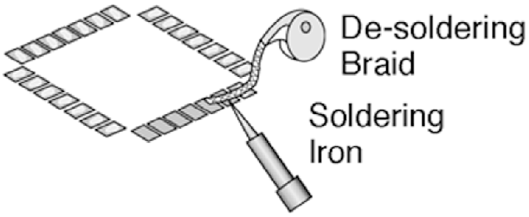
1. **Remove the solder from all of the pins of a Flat IC by using a desolder braid**



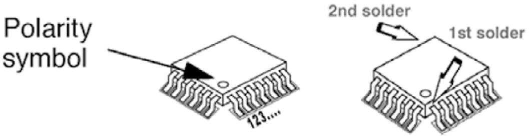
2. **Put the iron wire under the pins of the Flat IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.**


Soldering
Iron

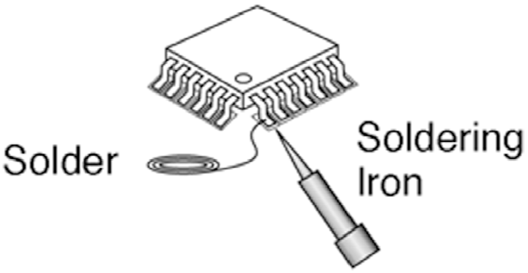
3. **Remove the solder from all the pads of the Flat IC by using a de solder braid**


De-soldering Braid
Soldering Iron

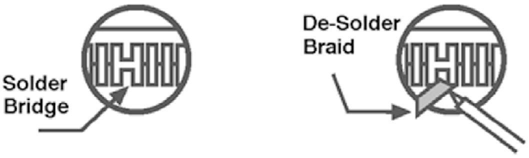
4. **Position the new Flat IC in place (apply the pins of the Flat IC to the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol**


Polarity symbol
123....
2nd solder
1st solder

5. **Solder all pins to the soldering pads using a fine tipped soldering iron**


Solder
Soldering Iron

6. **Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de solder braid as shown in the figure below**


Solder Bridge
De-Solder Braid

**IMPORTANT**
**To protect against possible damage to the solid state devices due to arching or static discharge, make certain that all ground wires and CRT DAG wire are securely connected.**

**CAUTION**

**The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the receiver to avoid damage to the test equipment or to the**

chassis. Connect the test equipment to the proper ground(hot) or (cold) when servicing, or incorrect voltages will be measured.

**WARNING**

This receiver has been designed to meet or exceed applicable safety and x-ray radiation protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to x-ray radiation and shock and fire hazard, parts indicated with the symbol on the schematic must be replaced with identical parts.

Order parts from the manufacturer’s partscenter using the parts numbers shown in this service manual, or provide the chassis number and the part reference number.

For optimum performance and reliability, all other parts should be replaced with components of identical specification.

## HORIZONTAL OSCILLATOR DISABLE CIRCUIT

This chassis employs a special circuit to protect against excessive high voltage and beam current. If, for any reason, the high voltage and beam current exceed a predetermined level this protective circuit activates and detunes the horizontal oscillatorthat limits the high voltage. The over-voltage protection circuit is not adjustable. However, if components indicated by the symbol on the schematic in either the horizontal sweep system or the over-voltage protection circuit itself are changed, theoperation of the circuit should be checked using the following procedure:

### Equipment needed to check the disabled circuit:

1. High voltage meter (0 ~ 50kV)
2. Variac or isolation transformer
3. D.C. current meter
4. Digital voltmeter

### PREPARATION

1. Connect receiver to A.C. 120 Volts. Do not turn ON.
2. Connect HIGH VOLTAGE meter to 2nd anode (H.V. button).

**NOTE**

Use cold ground for negative lead.

3. Connect the ammeter serial from the flyback anode lead to the

picture tube anode socket.

**PROCEDURE**

1. Apply a white pattern
2. Confirm that beam current is 2.0_mA.
3. Adjust VR524 so that high voltage is 30.5 ± 0.3kV.
4. Adjust VR538 so that digital meter reads 2.3 ± 0.05V
5. Apply a black pattern
6. Confirm that high voltage protector (SOS) operates at 35.5kV or less by adjusting VR524.
7. Turn VR524 counter clockwise, turn tv on and apply a white pattern.
8. Adjust VR524 so that high voltage meter reads 30.5 ± 0.3kV
9. Once the adjustment is completed, apply a bond on VR538 and VR538. Confirm B+ 142V ± 6.0V with 120V A.C. applied.

**NOTE**

If high voltage is not within the specified limit the cause must be determined before the receiver is returned to the owner.

# 3. About lead free solder (PbF)

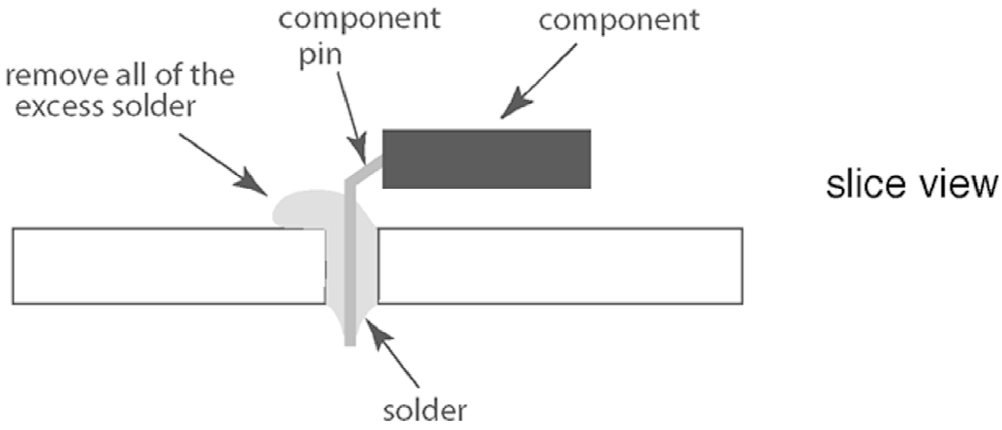
**NOTE**

Lead is listed as (Pb) in the periodic table of elements. / In the information below, Pb will refer to lead solder, and PbF will refer to Lead Free Solder. / The lead free solder used in our manufacturing process and discussed below is (Sn+Ag+Cu). / Thatis Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For / service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be / used. / PCBs manufacturedusing lead free solder will have the "PbF" or a leaf symbol stamped on the / back of PCB.

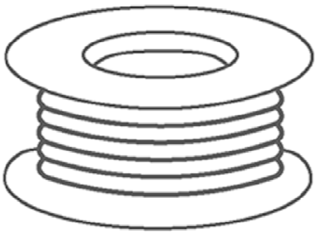
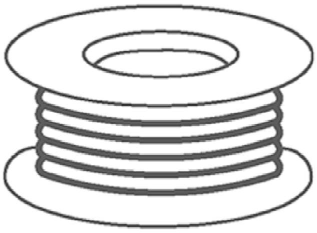
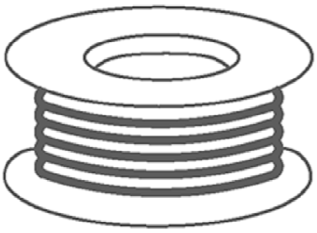
**CAUTION**

- **Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30 ~ 40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).**
- **Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C). / If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If thisis not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.**
- **After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side.**



**Suggested Pb free solder**

**There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also beused.**

| 0.3mm X 100g | 0.6mm X 100g | 1.0mm X 100g |
|---|---|---|
|  |  |  |

# 4. Receiver feature table

| FEATURE/MODEL | CT-30WX54J/UJ | CT-30WC14J/UJ |
|---|---|---|
| CHASSIS | BP419 | DP419 |
| MICRO | 256K | |
| MENU LANGUAGE | ENG/SPAN/FR | |
| CLOSE CAPTION | X | |
| V-CHIP (USA/CANADA | X | |
| CHANNEL INFO BANNER | X | |
| VIDEO INPUT SKIP | SKIP | |
| CHANNEL COUNT | 181 | |
| PIP (1T), 2T PIP (2T), 2T SPLIT | 2T SPLIT | |
| REMOTE CONTROL (W/LIGHT) | EUR7603ZF0 | |
| CRT SUPPLIER | MTPD D-COM | |
| FAMILY | GN1 | |
| COMB FILTER | MOTION ADP, 3DY/C | 3 LINE |
| HEC/VEC (X=BOTH) | X | |
| VM | X (SELECTABLE) | |
| V/A NORM (X=BOTH) | X | |
| COLOR TEMP | X | |
| AIP | X | |
| PRESET/INPUT LABELING | X | |
| VIDEO PICTURE MEMORY | X | |
| DIGITAL SCAN RATE | 1080i, 480p | |
| NTSC LINE DOUBLER | 480p PROGRESSIVE | |
| MTS/SAP/DBX | X | |
| BUILT-IN AUDIO POWER | 15W X 2 | 7.5W X 2 |
| No. OF SPEAKERS | 2 | |
| BASS/BALANCE/TREBLE CONTROL | X | |
| AI SOUND | X | |
| SURROUND | X | |
| SPATIALIZER/BBE | BBE | |
| A/V IN (REAR/FRONT) | 4(3/1) | 3(2/1) |
| PROGRAM OUT | X | |

| FEATURE/MODEL | CT-30WX54J/UJ | CT-30WC14J/UJ |
|---|---|---|
| AUDIO OUT (FAO: F, VAO:V) | F, V | FAO |
| COMPONENT INPUT (Y, Pb, Pr) | 2 | |
| S-VHS INPUT (REAR/FRONT) | 2/1 | 1/1 |
| HDMI/HDCP INPUT | X | |
| WEIGHT (KG/LB) | 54_KG/120_LB | |
| DIMENSIONS (W/D/H) mm | 1004.0 / 670.0 / 706.0 | |

**Note:**
**Specifications are subject to change without notice or obligation. Dimensions and weights are approximate.**

# 5. Board description table

| BOARD | CT-30WX54J/UJ | CT-30WC14J/UJ | DESCRIPTION |
|---|---|---|---|
| A-BOARD | TNP2AH061AC | TNP2AH061AE | MAIN CHASSIS |
| D-BOARD | TNP2AH062AE | | HIGH VOLTAGE AND DEFLEC |
| DG-BOARD | TNP2AA173AD | | DIGITAL VIDEO |
| DF-BOARD | TNP2AA172 | | DYNAMIC FOCUS |
| H-BOARD | TNP2AA174AB | TNP2AA174AG | REAR A/V |
| L-BOARD | TNP2AA169 | | CRT BOARD |
| K-BOARD | TNP2AA171AD | | KEY BOARD |
| G-BOARD | TNP2AA170AD | | FRONT A/V |

**NOTE**
**When ordering a replacement board assembly, append an “S” to the board number**

**EXAMPLE**
**To order the A Board, the replacement board is TNP2AH061ADS**

**NOTE:**
**The DG-Board is non-serviceable. If this board is defective, replace it with a new board.**

# 6. TV Location of controls

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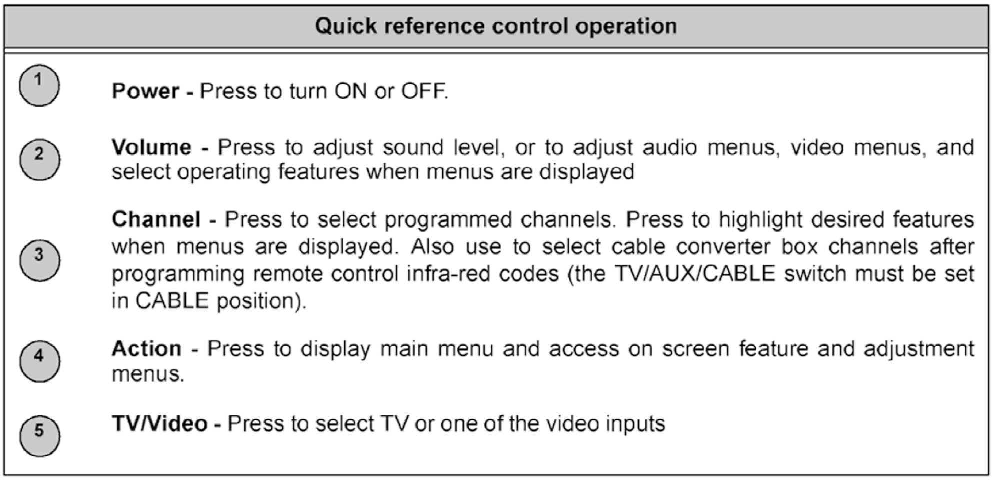
HDTV



**Quick reference control operation**

① **Power -** Press to turn ON or OFF.

② **Volume** - Press to adjust sound level, or to adjust audio menus, video menus, and select operating features when menus are displayed

③ **Channel -** Press to select programmed channels. Press to highlight desired features when menus are displayed. Also use to select cable converter box channels after programming remote control infra-red codes (the TV/AUX/CABLE switch must be set in CABLE position).

④ **Action** - Press to display main menu and access on screen feature and adjustment menus.

⑤ **TV/Video -** Press to select TV or one of the video inputs

# 7. Auto diagnosis feature

**This receiver incorporates a new self diagnosis feature. With this new feature will be easier for the technician to detect the failures. There is a LED located by the keyboard on the front panel, this LED will start flashing when a failure is detectedby the circuits located in specific areas, depending on how many times the LED is flashing, this will tell you what circuit should be checked. Make a count of flashing and see the table shown below. Please use this feature effectively especially forintermittent problems.**

**SOS of front LED**

| FLASHES | POSSIBLE CIRCUIT | SOS |
|---|---|---|
| 1 | POWER+140 | 140 OCP |
| 2 | LOW B+ D.C. | SOS 2 |
| 3 | N/A | N/A |
| 4 | SUB 9V | SUB 9V |
| 5 | HI VOLTAGE HHS | GC2M |
| 6 | IC4001 | GC3 FM |
| 7 | IC4201 | GC3 FS |
| 8 | IC4401 | GC3 I |
| 9 | DIGITAL TO DIGITAL INTERFACE LOCK | DDILOCK |

**AFTER THE COUNT**

**Proceed to check that area, verify what board is the problem located, this way the area to check will be reduced until the failure is found.**

# 8. EEPROM copy jig

**This CTV has a feature that allows to clone or back-up main EEPROM data adjustments from a CTV to other by connecting a jig to the CTV set. A jig part number TXFJIG02SER, is available through Matsushita/Panasonic Services.**

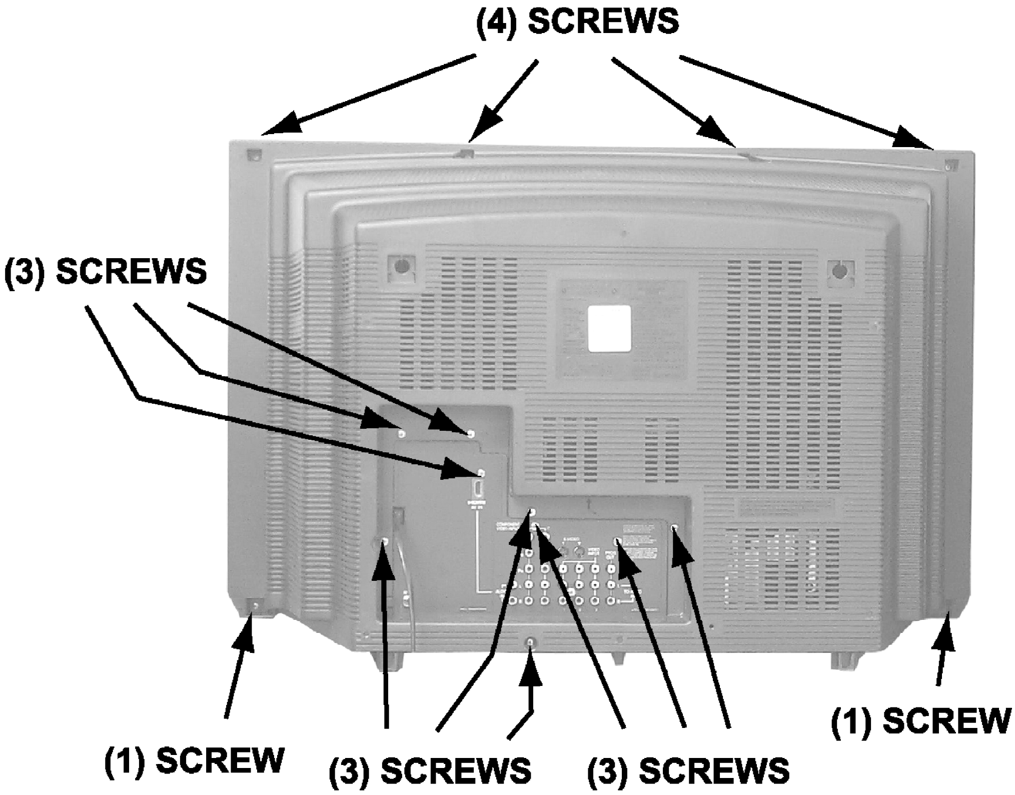
**Preparation:**

**To connect this jig, remove the lower back cover as instructed on disassembly for service section on this service manual and insert the jig into A15 connector located on the A-Board.**

**Procedure to copy data:**

1. **Enter to service mode and display service menu.**
2. **Select “AREA” DAC and then press ACTION button on remote to enter. Press VOL right/left to select one of the following options then press ACTION:**
    - **Select ALL to copy all main EEPROM data**
    - **Select ADJ to copy only adjustment data.**
    - **Select FIX to copy only fix data**
3. **To copy data from main EEPROM to jig, select “IN → EX” DAC and press ACTION button on remote.**
4. **To copy data from jig to main EEPROM, select “EX → IN” DAC and press ACTION button on remote.**

# 9. Back cover removal



**NOTE:**
**Appearance number of inputs may vary depending on the model.**

# 10. Service mode (electronic adjustments)

**This receiver has electronic technology using the IC bus concept. It performs as a control function and it replaces many mechanical controls. Instead of adjusting mechanical controls individually, many of the control functions are now performed byusing “on screen display menu”. (The service adjustment mode).**

**NOTE**
**It is suggested that the technician reads all the way through and understand the following procedure for entering/exiting the service adjustment mode; then proceed with the instructions working with the receiver. When becoming familiarwith the procedure, the flow chart for service mode may be used as a quick guide.**

### Quick entry to service mode

**When minor adjustments need to be done to the electronic controls, the method of entering the service mode without removal of the cabinet back is as follows using the remote control:**

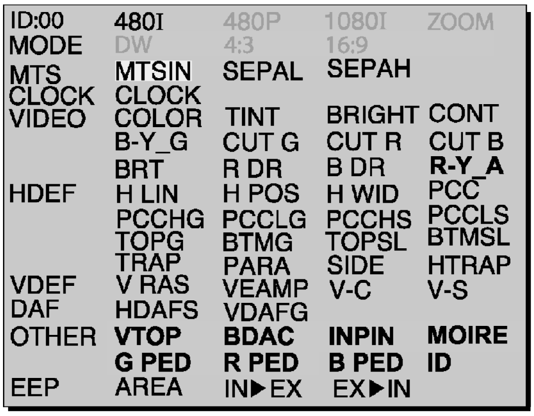
1. **Select SET-UP icon and select CABLE mode.**
2. **Select TIMER icon and set SLEEP time for 30 Min.**
3. **Exit menus.**
4. **Tune to the channel 124.**
5. **Adjust VOLUME to minimum (0).**
6. **Press VOL → (decrease) on receiver. Red “CHK” appears in upper corner.**

**NOTE**
**After receiver is set into service mode, set TIMER back to NO.**

**To toggle between aging and service modes:**

**While the “CHK” is displayed on the left top corner of the CRT, pressing “ACTION” and “VOL” UP on the TV simultaneously will toggle between the modes. Red “CHK” for serviceand yellow “CHK” for aging.**

7. **Press POWER on the remote control to display the service adjustment modes menu, select adjustment by pressing the volume right/left buttons and channel up/down buttons on the remote and ACTION to enter the adjustment.**


ID:00 480I 480P 1080I ZOOM
MODE DW 4:3 16:9
MTS MTSIN SEPAL SEPAH
CLOCK CLOCK
VIDEO COLOR TINT BRIGHT CONT
B-Y_G CUT G CUT R CUT B
BRT R DR B DR R-Y_A
HDEF H LIN H POS H WID PCC
PCCHG PCCLG PCCHS PCCLS
TOPG BTMG TOPSL BTMSL
TRAP PARA SIDE HTRAP
VDEF V RAS VEAMP V-C V-S
DAF HDAFS VDAFG
OTHER VTOP BDAC INPIN MOIRE
G PED R PED B PED ID
EEP AREA IN▶EX EX▶IN

**NOTE**
**Some adjustments are available only in some modes (480i, 480p, 1080i); it is needed to apply the format. A 1080i, 480p, 480i pattern can be obtained from Panasonic’s TU-DST51 set-top box DTV decoder.**

**Exiting the service mode:**

**This TV goes out from service mode when it is unplugged or turned OFF. To exit the service mode, turn the TV OFF or unplug the TV from A.C.**

### Other method

**Press ACTION and POWER on the receiver simultaneously for at least 2 seconds.**
**The receiver momentarily shuts off; then comes back on tuned to channel 3 with a preset level of sound.**
**Any programmed channels, channels caption data and some others user defined settings will be erased when exited by pressing ACTION and POWER on receiver.**

### IMPORTANT NOTE

**Always check that the TV exits the service mode.**

### To confirm colors

**When in service mode (red "CHK" is displayed) press RECALL on the remote control to enter the purity field check mode**

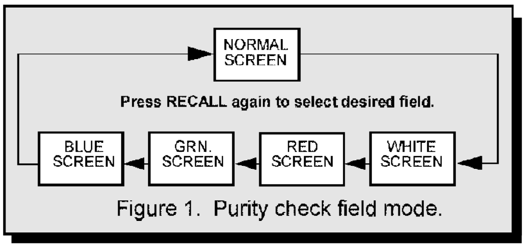


Figure 1. Purity check field mode.

### Entering service mode (open-back method)

**While the receiver is connected and operating in normal mode, momentarily short test point / FA1 (A15 pin 2) to cold ground (A-Board).**
**The receiver enters the aging mode.**
**Yellow letters "CHK" appear in the upper left corner of the screen. / (The volume right/left and channel up/down will adjust rapidly).**

## 10.1. Service adjustment default values for service items

| REGISTER | DESCRIPTION | FORMAT | | |
|---|---|---|---|---|
| | | NTSC | 1080i | ZOOM |
| MTSIN | INPUT LEVEL | 21 | N/A | N/A |
| SEPAL | LOW LEVEL SEPARATION | 06 | N/A | N/A |
| SEPAH | HIGH LEVEL SEPARATION | 19 | N/A | N/A |
| CLOCK | CLOCK | 128 | N/A | N/A |
| COLOR | COLOR | 20 | 20 | N/A |
| TINT | TINT | 80 | 80 | N/A |
| BRIGH | SUB-BRIGHTNESS | 09 A0 | 09 A0 | N/A |
| CONT | SUB-CONTRAST | 02 A0 | 02 A0 | N/A |
| B-Y_G | MAGENTA TINT ADJ | 3D | 3C | N/A |
| CUT G | GREEN CUT-OFF | 02 16 | 02 16 | N/A |
| CUT R | RED CUT-OFF | 02 72 | 02 72 | N/A |
| CUT B | BLUE CUT-OFF | 01 EA | 01 EA | N/A |
| BRT | BRIGHT | 0A 34 | 0A 34 | N/A |
| R DR | RED DRIVE | 85 | 85 | N/A |
| B DR | BLUE DRIVE | 87 | 87 | N/A |
| R-Y_A | R-Y_A | 80 | 80 | N/A |
| HLIN | HORIZONTAL LINEARITY | 53 | 80 | N/A |
| HPOS | HORIZONTAL POSITIONING | 03 45 | 03 CE | N/A |
| HWID | HORIZONTAL WIDTH | B4 | 77 | N/A |
| PCC | PINCUSHION CORRECTION | 9B | B8 | B3 |
| PCCHG | PINCUSHION HIGH | 38 | 3E | 3E |
| PCCLG | PINCUSHION LOW | 39 | 3E | 3E |
| PCCHS | PINCUSHION HIGH | 05 | 05 | 05 |
| PCCLS | PINCUSHION LOW | 05 | 05 | 05 |
| TOPG | TOP CORNER PINCUSHION | 58 | 5A | 5A |
| BTMG | BOTTOM CORNER PINCUSHION | 58 | 57 | 57 |
| TOPSL | TOP CORNER PINCUSHION SLICE LEVEL | 03 | 03 | 03 |
| BTMSL | BOTTOM CORNER PINCUSHION SLICE LEVEL | 03 | 03 | 03 |
| TRAP | TRAPEZOID | 80 | 85 | 85 |
| PARA | PARALLELOGRAM | 10 | 10 | 10 |
| SIDE | E-W PINCUSHION ADJUSTMENT | 16 | 15 | 15 |
| HTRAP | HORIZONTAL TRAPEZOID | 20 | 20 | 20 |
| VRAS | VERTICAL POSITION | 91 | AA | A2 |
| VEAMP | VERTICAL SIZE | 01 62 | 00 B0 | 01 A4 |
| V-C | VERTICAL LINEARITY | 6E | 78 | 78 |
| V-S | VERTICAL S CORRECTION | 56 | 56 | 56 |
| HDAFS | HORIZONTAL DAF PHASE | 00 A4 | 01 B4 | N/A |
| VTOP | VTOP | 00 D9 | 00 D1 | 00 FA |
| BDAC | BDAC | 73 | 77 | N/A |
| INPIN | INPIN | 20 | 20 | 20 |
| MOIRE | MOIRE | 80 | 80 | 80 |
| G PED | G PED | 80 | N/A | N/A |
| R PED | R PED | 80 | N/A | N/A |

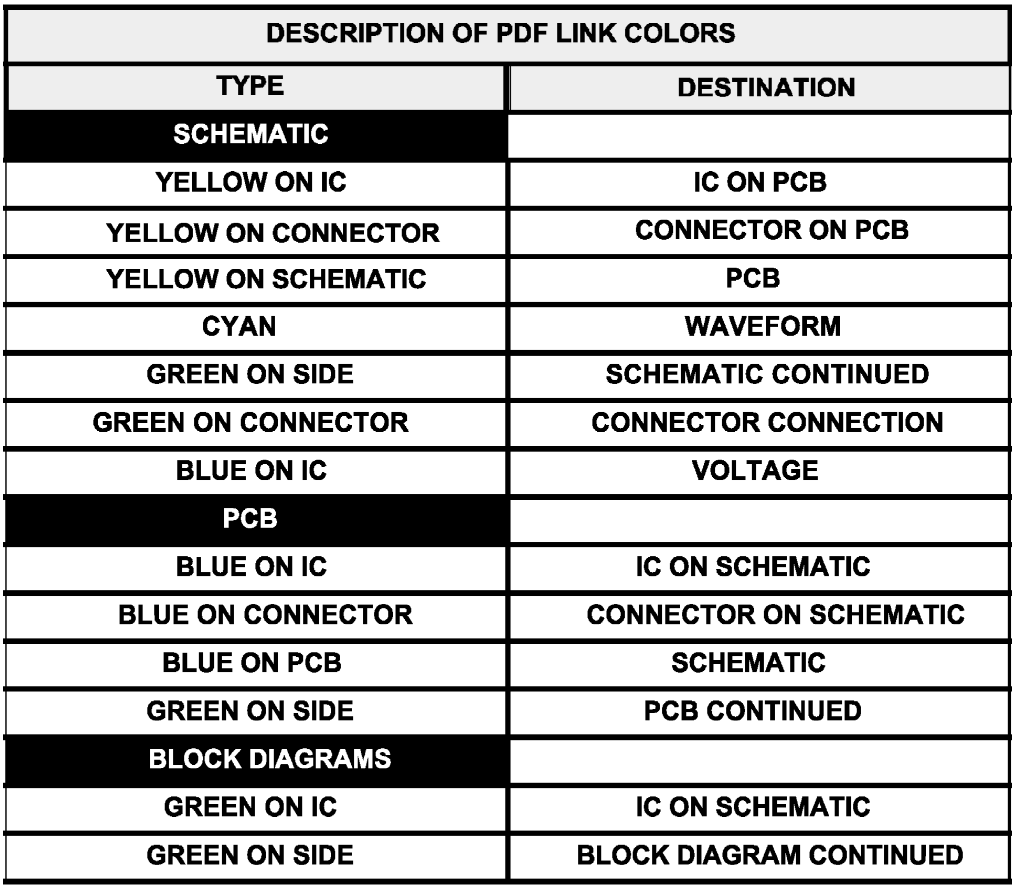
| REGISTER | DESCRIPTION | FORMAT | | |
|---|---|---|---|---|
| | | NTSC | 1080i | ZOOM |
| B PED | B PED | 80 | N/A | N/A |

**NOTE:**
**The above table shows the default values for the service items, this values may vary depending on the serviced TV.**

| | ID DATA | | |
|---|---|---|---|
| MODEL | NTSC | 1080i | ZOOM |
| CT-30WX54J/UJ | 00 | 00 | 00 |
| CT-30WC14J/UJ | 0C | 0C | 0C |

**Important Note:**
**When changing "ID" register, message "Unplug AC to activate" will appear on the screen and the set must be unplugged.**

# 11. Reference of PDF links color



| DESCRIPTION OF PDF LINK COLORS | |
|---|---|
| TYPE | DESTINATION |
| SCHEMATIC | |
| YELLOW ON IC | IC ON PCB |
| YELLOW ON CONNECTOR | CONNECTOR ON PCB |
| YELLOW ON SCHEMATIC | PCB |
| CYAN | WAVEFORM |
| GREEN ON SIDE | SCHEMATIC CONTINUED |
| GREEN ON CONNECTOR | CONNECTOR CONNECTION |
| BLUE ON IC | VOLTAGE |
| PCB | |
| BLUE ON IC | IC ON SCHEMATIC |
| BLUE ON CONNECTOR | CONNECTOR ON SCHEMATIC |
| BLUE ON PCB | SCHEMATIC |
| GREEN ON SIDE | PCB CONTINUED |
| BLOCK DIAGRAMS | |
| GREEN ON IC | IC ON SCHEMATIC |
| GREEN ON SIDE | BLOCK DIAGRAM CONTINUED |

# 12. Schematic Diagrams

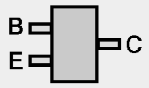
## 12.1. Schematic notes in english

# Notes:

## IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

## CHIP TRANSISTOR LEAD DESIGNATION



## SCHEMATIC NOTES

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ● ; Test point but no pin ○.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏛ indicates COLD GROUND.

*NOTE: All other component symbols are used for engineering design purposes.*

## VOLTAGE MEASUREMENTS

1. Voltage measurement:
   - AC input to the Receiver is 120V. NTSC (HD, 1125i & 525P when applicable) signal generator is connected to the antenna of the Receiver. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min.
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter.
   Incorrect ground connection will result in erroneous readings.

*CAUTION:* ***Incorrect ground connection of the test equipment will result in erroneous readings.***

## WAVEFORM MEASUREMENTS

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to “MIN”.
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

*CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.*

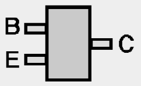
## 12.2. Schematic notes in spanish

# Notas

## NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

**IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP***



## NOTAS DE LOS DIAGRAMAS

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en $\mu$H.
4. Los puntos de prueba en la terminal de algún componente son indicados por ● Los puntos de prueba fuera de los componentes se indican con ○.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⊥ indica conexión a **Tierra Fría**.

***NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.***

## MEDICIÓN DE VOLTAJES

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

***PRECAUCION: SI no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.***

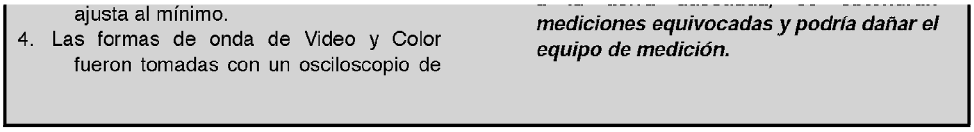
## MEDICIÓN DE FORMAS DE ONDA

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.

banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.

5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

***PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán***



ajusta al mínimo.

4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de

***mediciones equivocadas y podría dañar el equipo de medición.***

### 12.3. A-Board schematic 1 of 4

### 12.4. A-Board schematic 2 of 4

### 12.5. A-Board schematic 3 of 4

### 12.6. A-Board schematic 4 of 4

### 12.7. D-Board schematic 1 of 5

### 12.8. D-Board schematic 2 of 5

### 12.9. D-Board schematic 3 of 5

### 12.10. D-Board schematic 4 of 5

### 12.11. D-Board schematic 5 of 5

### 12.12. DF-Board schematic

### 12.13. H-Board schematic

## 13. Parts list

### 13.1. Description of abbreviations guide

**Important Safety Notice**

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use manufacturer's specified parts.

### Abbreviation of part name and description

**1. Resistor**
Example :
ERD25TJ104 **C** 100KΩ, **J**, 1/4W
Type Allowance

| Type | Allowance |
|---|---|
| C : Carbon | F : ± 1% |
| F : Fuse | G : ± 2% |
| M : Metal Oxide<br>Metal Film | J : ± 5%<br>K : ± 10% |
| S : Solid | M : ± 20% |
| W : Wire Wound | |

**2. Capacitor**
Example :
ECKF1H103ZF **C** 0.01μF, **Z**, 50V
Type Allowance

| Type | Allowance |
|---|---|
| C : Carbon | C : ± 0.25pF |
| E : Electrolytic | D : ± 0.5pF |
| P : Polyester<br>Polypropylene | F : ± 1pF<br>G : ± 3% |
| T : Tantalum | J : ± 5% |
| | K : ± 10% |
| | L : ± 15% |
| | M : ± 20% |
| | P : ± 100%, -0% |
| | Z : ± 80%, -20% |

## 13.2. Parts list

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | | CAPACITORS | |
| C037 | ECA0JM222B | CAP E 2200UF-6.3V | |
| C038 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C047 | ECA1HM330B | CAP E 33UF-50V | |
| C048 | ECA1HMR22B | CAP E .22UF-50V | |
| C052 | ECA1HM4R7B | CAP E 4.7UF-50V | |
| C053 | ECA1HM2R2B | CAP E 2.2UF-50V | |
| C054 | ECA1HM4R7B | CAP E 4.7UF-50V | |
| C055 | ECA1VM470B | CAP E 47UF-35V | |
| C056 | ECA1VM471B | CAP E 470UF-35V | |
| C059 | ECJ2VC1H101J | CAP C 100PF-J-50V | |
| C060 | ECJ2VC1H101J | CAP C 100PF-J-50V | |
| C061 | ECA1HMR22B | CAP E .22UF-50V | |
| C062 | ECA1HM2R2B | CAP E 2.2UF-50V | |
| C451 | ECA1EM471B | CAP E 470UF-25V | |
| C452 | ECA1EM471B | CAP E 470UF-25V | |
| C453 | ECA1HM101B | CAP E 100UF-50V | |
| C454 | ECQV1H224JL3 | CAP P .22UF-J-50V | |
| C455 | ECA1CM221B | CAP E 10UF-16V | |
| C456 | ECQB1H472JF3 | CAP P 4700PF-J-50V | |
| C457 | ECQB1H471JF3 | CAP P 470PF-J-50V | |
| C458 | ECQV1H105JL3 | CAP P 1.0UF-J-50V | |
| C459 | ECQE2104KF3 | CAP P .10UF-K-200V | |
| C460 | ECQE2224KF3 | CAP P .22UF-K-200V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C461 | ECA1HM010B | CAP E 1UF-50V | |
| C462 | ECA0JM221B | CAP E 220UF-6.3V | |
| C463 | ECA1VM470B | CAP E 47UF-35V | |
| C465 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C466 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C467 | ECQV1H224JL3 | CAP P .22UF-J-50V | |
| C468 | ECQB1H272JF3 | CAP P 2700PF-J-50V | |
| C469 | ECQB1H104JF3 | CAP P .10UF-J-50V | |
| C471 | ECQB1H104JF3 | CAP P .10UF-J-50V | |
| C472 | ECA1HM4R7B | CAP E 4.7UF-50V | |
| C502 | ECQB1H104JF3 | CAP P .10UF-J-50V | |
| C503 | ECKR3A102KBP | CAP C 1000PF-K-1KV | |
| C505 | ECQB1H104JF3 | CAP P .10UF-J-50V | |
| C507 | ECEA2CNR47SB | CAP E .47UF-160V | |
| C508 | ECQB1H104JF3 | CAP P .10UF-J-50V | |
| C509 | ECKR3D222KBP | CAP C 2200PF-K-2KVDC | |
| C510 | ECWH20272JVY | CAP P 2700PF-J-2KV | |
| C511 | ECWH20272JVY | CAP P 2700PF-J-2KV | |
| C512 | ECA1HMR47B | CAP E .47UF-50V | |
| C514 | ECQM4472JZW | CAP P 4700PF-J-400V | |
| C516 | ECQB1H223JF3 | CAP P .022UF-J-50V | |
| C517 | ECJ2VG1H151J | CAP C 150-J-50V | |
| C518 | ECKW3D681KBR | CAP C 680PF-K-2KV | |
| C519 | ECKW3D681KBP | CAP C 680PF-K-2KV | |
| C520 | ECKW3D222KBP | CAP C 2200PF-K-2KV | |
| C521 | ECWF2364JSR | CAP P .36UF-J-200V | |
| C522 | ECWF4393RJB | CAP P .039UF-J-400V | |
| C523 | ECQB1H104JF3 | CAP P .10UF-J-50V | |
| C524 | ECQE1224KF3 | CAP P .22UF-K-100V | |
| C525 | EEUNA1E220B | CAP E 22UF-25V | |
| C526 | ECQB1H104JF3 | CAP P .10UF-J-50V | |
| C527 | ECQV1H224JL3 | CAP P .22UF-J-50V | |
| C529 | ECQB1H473JF3 | CAP P .047UF-J-50V | |
| C532 | ECQB1H104JF3 | CAP P .10UF-J-50V | |
| C534 | ECQB1H103JF3 | CAP P .01UF-J-50V | |
| C535 | ECQV1H104JL3 | CAP P .10UF-J-50V | |
| C536 | ECEA1EN100UB | CAP E 10UF-25V | |
| C537 | ECQB1H473JF3 | CAP P .047UF-J-50V | |
| C538 | ECA1CM471B | CAP E 470UF-16V | |
| C539 | ECA1CM471B | CAP E 470UF-16V | |
| C541 | ECQE6103RKF | CAP P.010UF-K-100V | |
| C543 | ECKW3D151KBP | CAP C 150PF-K-2KV | |
| C544 | ECA1HM010B | CAP E 1UF-50V | |
| C545 | ECKR3D471KBP | CAP C 470PF-K-2KV | |
| C546 | ECKW3D102KBR | CAP C 1000PF-K-2KV | |
| C548 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C550 | ECCN3A470KGE | CAP C 47PF-K-1KV | |
| C553 | ECA1CM101B | CAP E 100UF-16V | |
| C554 | ECA1VM101B | CAP E 100UF-35V | |
| C555 | ECKR3D152KBP | CAP C .0015UF-K-2KVDC | |
| C556 | ECA1VM470B | CAP E 47UF-35V | |
| C558 | ECQM4332JZW | CAP C 3300PF-J-400V | |
| C560 | ECA1HM100B | CAP E 10UF-50V | |
| C561 | ECA2EHG470E | CAP E 47UF-250V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| **C562** | **ECKR3A561KBP** | **CAP C 560PF-K-1KV** | |
| **C563** | **EEUEB2E330E** | **CAP E 33UF-100V** | |
| **C564** | **ECA1VM470B** | **CAP E 47UF-35V** | |
| **C566** | **ECA1VM470B** | **CAP E 47UF-35V** | |
| **C567** | **EEUED2C101E** | **CAP E 100UF-100V** | |
| **C568** | **ECWF4683RJB** | **CAP P .068UF-R-400V** | |
| **C569** | **ECWF4683RJB** | **CAP P .068UF-R-400V** | |
| **C571** | **ECKRHT332KB** | **CAP C 3300PF-K-500V** | |
| **C573** | **ECJ2VF1H103Z** | **CAP C .01UF-Z-50V** | |
| **C574** | **ECA1CM100B** | **CAP E 10UF-16V** | |
| **C575** | **ECA1CM101B** | **CAP E 100UF-16V** | |
| **C576** | **ECA1CM101B** | **CAP E 100UF-16V** | |
| **C577** | **ECQE6473RKF** | **CAP C .047UF-R-630V** | |
| **C580** | **ECQB1H223JF3** | **CAP P .022UF-J-50V** | |
| **C581** | **ECQB1H104JF3** | **CAP P .10UF-J-50V** | |
| **C582** | **ECQB1H104JF3** | **CAP P .10UF-J-50V** | |
| **C589** | **ECQE6184JFB** | **CAP P .18UF-J-630V** | |
| **C590** | **ECJ2VB1H471K** | **CAP C 470PF-K-50V** | |
| **C713** | **ECKR3A222KBP** | **CAP C .0022UF-K-1KV** | |
| **C714** | **ECQE2103KF3** | **CAP P .010UF-K-200V** | |
| **C801** | **ECQU2A224MLA** | **CAP P .22UF-M-250V** | ⚠ |
| **C802** | **ECQU2A224MLA** | **CAP P .22UF-M-250V** | ⚠ |
| **C803** | **ECQU2A224MLA** | **CAP P .22UF-M-250V** | ⚠ |
| **C804** | **ECQU2A224MLA** | **CAP P .22UF-M-250V** | ⚠ |
| **C805** | **ECQB1H103JF3** | **CAP P .01UF-J-50V** | |
| **C806** | **ECQU2A103MLA** | **CAP P .010UF-M-250V** | ⚠ |
| **C807** | **ECKCNA222MEB** | **CAP C 2200PF-M-125V** | ⚠ |
| **C808** | **ECKCNA222MEB** | **CAP C 2200PF-M-125V** | ⚠ |
| **C809** | **ECQB1H471JF3** | **CAP P 470PF-J-50V** | |
| **C810** | **EETHC2D102J** | **CAP E 1000UF-200V** | |
| **C811** | **ECA1HM100B** | **CAP E 10UF-50V** | |
| **C812** | **ECA1CM471B** | **CAP E 470UF-16V** | |
| **C813** | **ECA1HM010B** | **CAP E 1UF-50V** | |
| **C815** | **ECA1EM471B** | **CAP E 470UF-25V** | |
| **C821** | **ECKW3D332KBP** | **CAP C 3300PF-K-2KV** | |
| **C822** | **ECQB1H102JF3** | **CAP P 1000PF-J-50V** | |
| **C823** | **ECQB1H471JF3** | **CAP P 470PF-J-50V** | |
| **C824** | **ECKW3D102KBP** | **CAP C 1000PF-K-2KV** | |
| **C825** | **ECA1HHG470B** | **CAP E 47UF-50V** | |
| **C826** | **ECJ2VF1H104Z** | **CAP C .1UF-Z-50V** | |
| **C827** | **ECA1HHG010B** | **CAP E 1UF-50V** | |
| **C828** | **ECKR3A331KBP** | **CAP C 330PF-K-1KVDC** | |
| **C830** | **EC0S2DA471BB** | **CAP E 470UF-200V** | |
| **C831** | **ECKW3D102KBP** | **CAP C 1000PF-K-2KV** | |
| **C834** | **EEUFC1H222E** | **CAP E 2200UF-50V** | |
| **C835** | **ECA2EM101E** | **CAP E 100UF-250V** | |
| **C836** | **ECKR3A151KBP** | **CAP C 150PF-K-1KV** | |
| **C840** | **EEUFC1E222E** | **CAP E 2200UF-25V** | |
| **C841** | **ECA1VHG222E** | **CAP E 2200UF-35V** | |
| **C842** | **ECKR3A331KBP** | **CAP C 330PF-K-1KVDC** | |
| **C843** | **ECA1VHG222E** | **CAP E 2200UF-35V** | |
| **C844** | **ECKR3A471KBP** | **CAP C 470PF-K-1KV** | |
| **C846** | **ECEA1CN101UB** | **CAP E 100UF-16V** | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C852 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C854 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C855 | ECA1CM101B | CAP E 100UF-16V | |
| C855 | EEUFC1A471B | CAP E 470UF-10V | |
| C857 | ECA1HM471E | CAP E 470UF-50V | |
| C858 | ECA1CM101B | CAP E 100UF-16V | |
| C864 | ECEA1CN101UB | CAP E 100UF-16V | |
| C867 | ECQM4103RJZ | CAP P .01UF-J-400V | |
| C871 | ECA1CM102B | CAP E 1000UF-16V | |
| C875 | ECQB1H473JF3 | CAP P .047UF-J-50V | |
| C881 | ECKR3A471KBP | CAP C 470PF-K-1KV | |
| C882 | ECA1VHG222E | CAP E 2200UF-35V | |
| C900 | ECJ2VF1C104Z | CAP C .1UF-Z-16V | |
| C901 | ECJ2VC1H102K | CAP C .001UF-K-50V | |
| C903 | ECJ2VF1C104Z | CAP C .1UF-Z-16V | |
| C905 | ECA1CM221B | CAP E 10UF-16V | |
| C906 | ECJ2VF1C104Z | CAP C .1UF-Z-16V | |
| C910 | ECQB1223KF3 | CAP P .22UF-K-100V | |
| C911 | ECQM4103KZ3 | CAP P .01UF-K-400V | |
| C912 | ECA2CM330E | CAP E 30UF-160V | |
| C914 | ECQB1223KF3 | CAP P .22UF-K-100V | |
| C915 | ECA2CHG330E | CAP E 33UF-160V | |
| C916 | ECA1CM101B | CAP E 100UF-16V | |
| C917 | ECA1CM101B | CAP E 100UF-16V | |
| C918 | ECA1CM221B | CAP E 10UF-16V | |
| C919 | ECJ2VC1H102K | CAP C .001UF-K-50V | |
| C920 | ECJ2VC1H102K | CAP C .001UF-K-50V | |
| C927 | ECJ2VF1C104Z | CAP C .1UF-Z-16V | |
| C1051 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C1052 | ECEA1CKA470B | CAP E 47UF-16V | |
| C1401 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C1402 | ECJ2VF1C104Z | CAP C .1UF-Z-16V | |
| C1403 | ECA1VM470B | CAP E 47UF-35V | |
| C1501 | ECA1VM470B | CAP E 47UF-35V | |
| C1502 | ECQB1H103JF3 | CAP P .01UF-J-50V | |
| C1505 | ECQB1H103JF3 | CAP P .01UF-J-50V | |
| C1506 | ECQB1H223JF3 | CAP P .022UF-J-50V | |
| C1507 | ECQB1H223JF3 | CAP P .022UF-J-50V | |
| C1522 | ECA1VM101B | CAP E 100UF-35V | |
| C1523 | ECA1VM470B | CAP E 47UF-35V | |
| C1526 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C1528 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C1535 | ECA1HM100B | CAP E 10UF-50V | |
| C1557 | ECQB1H102JF3 | CAP P 1000PF-J-50V | |
| C1558 | ECJ2VC1H680J | CAP C 68PF-J-50V | |
| C1559 | ECQB1H102JF3 | CAP P 1000PF-J-50V | |
| C1570 | ECA1VM470B | CAP E 47UF-35V | |
| C2202 | ECEA1HKA2R2B | CAP E 2.2UF-50V | |
| C2203 | ECEA1HKA4R7B | CAP E 4.7UF-50V | |
| C2204 | AP106K016CAE | CAP T 1OUF-16V | |
| C2205 | ECEA1HKA010B | CAP E 1.0UF-50V | |
| C2206 | ECQB1H223JF3 | CAP P .022UF-J-50V | |
| C2207 | AP335K016CAE | CAP T 3.3UF-16V | |
| C2208 | ECJ2VB1C104K | CAP C .1UF-K-16V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| **C2209** | **ECJ2VB1C104K** | **CAP C .1UF-K-16V** | |
| **C2210** | **ECJ2VB1C104K** | **CAP C .1UF-K-16V** | |
| **C2211** | **ECEA1HKA100B** | **CAP E 1UF-50V** | |
| **C2212** | **ECQB1H473JF3** | **CAP P .047UF-J-50V** | |
| **C2215** | **ECEA1CKA101B** | **CAP E 100UF-16V** | |
| **C2218** | **ECEA1HKAR47B** | **CAP E .47UF-50V** | |
| **C2301** | **ECEA1HN100UB** | **CAP E 10UF-50V** | |
| **C2302** | **ECJ2VB1H332K** | **CAP C .0033UF-K-50V CT-30WX54J/UJ** | |
| **C2303** | **ECJ2VB1H332K** | **CAP C .0033UF-K-50V CT-30WX54J/UJ** | |
| **C2304** | **ECJ2VB1H332K** | **CAP C .0033UF-K-50V CT-30WX54J/UJ** | |
| **C2305** | **ECEA1HN100UB** | **CAP E 10UF-50V CT-30WX54J/UJ** | |
| **C2306** | **ECJ2VB1H332K** | **CAP C .0033UF-K-50V CT-30WX54J/UJ** | |
| **C2307** | **ECJ2VB1H332K** | **CAP C .0033UF-K-50V CT-30WX54J/UJ** | |
| **C2308** | **ECJ2VB1H332K** | **CAP C .0033UF-K-50V CT-30WX54J/UJ** | |
| **C2310** | **ECJ2VF1H104Z** | **CAP C .1UF-Z-50V CT-30WX54J /UJ** | |
| **C2311** | **ECA1EM221B** | **CAP E 220UF-25V CT-30WX54J/UJ** | |
| **C2313** | **ECA1HM4R7B** | **CAP E 4.7UF-50V CT-30WX54J/UJ** | |
| **C2315** | **ECA1HM4R7B** | **CAP E 4.7UF-50V CT-30WX54J/UJ** | |
| **C2318** | **ECA1HM2R2B** | **CAP E 2.2UF-50V** | |
| **C2320** | **F1J1C225A083** | **CAP C 2.2UF-Z-16V** | |
| **C2321** | **ECJ2VB1H333K** | **CAP C .033UF-K-50V** | |
| **C2322** | **ECEA1CN100UB** | **CAP E 10UF-16V** | |
| **C2323** | **ECJ2VB1H561K** | **CAP C 560PF-K-50V** | |
| **C2324** | **ECJ2VB1H471K** | **CAP C 470PF-K-50V** | |
| **C2325** | **ECJ2VC1H270J** | **CAP C 27PF-J-50V** | |
| **C2326** | **ECJ2VF1H104Z** | **CAP C .1UF-Z-50V** | |
| **C2327** | **ECJ2VF1H103Z** | **CAP C .01UF-Z-50V** | |
| **C2328** | **ECA1EM101B** | **CAP E 100UF-25V** | |
| **C2329** | **ECJ2VB1H471K** | **CAP C 470PF-K-50V** | |
| **C2330** | **ECJ2VB1H331K** | **CAP C 330PF-K-50V** | |
| **C2331** | **ECJ2FB1H104K** | **CAP C .1UF-K-50V** | |
| **C2332** | **ECJ2VB1H682K** | **CAP C .0068UF-K-50V** | |
| **C2333** | **ECJ2VB1H331K** | **CAP C 330PF-K-50V** | |
| **C2334** | **ECJ2FB1H104K** | **CAP C .1UF-K-50V** | |
| **C2335** | **ECJ2VB1H471K** | **CAP C 470PF-K-50V** | |
| **C2336** | **ECJ2VB1H471K** | **CAP C 470PF-K-50V** | |
| **C2337** | **ECJ2VB1H682K** | **CAP C .0068UF-K-50V** | |
| **C2338** | **ECJ2FB1H104K** | **CAP C .1UF-K-50V** | |
| **C2341** | **ECEA1CN100UB** | **CAP E 10UF-16V** | |
| **C2342** | **ECJ2VB1H333K** | **CAP C .033UF-K-50V** | |
| **C2345** | **EEUFC1E222E** | **CAP E 2200UF-25V** | |
| **C2346** | **ECJ2VB1H561K** | **CAP C 560PF-K-50V** | |
| **C2351** | **ECJ2VB1H561K** | **CAP C 560PF-K-50V CT-30WX54J /UJ** | |
| **C2352** | **ECJ2VB1H561K** | **CAP C 560PF-K-50V CT-30WX54J /UJ** | |
| **C2352** | **EEUFC1E222E** | **CAP E 2200UF-25V** | |
| **C2353** | **EEUFC1E222E** | **CAP E 2200UF-25V** | |
| **C2354** | **ECJ2VB1H561K** | **CAP C 560PF-K-50V CT-30WX54J /UJ** | |
| **C2355** | **ECJ2VB1H561K** | **CAP C 560PF-K-50V CT-30WX54J /UJ** | |
| **C2357** | **ECJ2VF1H104Z** | **CAP C .1UF-Z-50V CT-30WX54J /UJ** | |
| **C2359** | **ECQV1H224JL3** | **CAP P .22UF-J-50V** | |
| **C2362** | **ECQV1H224JL3** | **CAP P .22UF-J-50V** | |
| **C2364** | **ECJ2FB1H104K** | **CAP C .1UF-K-50V** | |
| **C2365** | **ECJ2FB1H104K** | **CAP C .1UF-K-50V** | |
| **C2365** | **ECJ2VF1H104Z** | **CAP C .1UF-Z-50V CT-30WX54J /UJ** | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C2366 | EEUFC1E222E | CAP E 2200UF-25V | |
| C2370 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C2371 | ECEA1CN100UB | CAP E 10UF-16V | |
| C2372 | ECEA1CN100UB | CAP E 10UF-16V | |
| C2373 | ECA1HM100B | CAP E 10UF-50V | |
| C2374 | ECA1HM100B | CAP E 10UF-50V | |
| C2375 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2376 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2377 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2378 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2404 | ECJ2VB1H223K | CAP C .022UF-K-50V CT-30WX54J /UJ | |
| C2406 | ECJ2FB1H104K | CAP C .1UF-K-50V CT-30WX54J /UJ | |
| C2408 | ECEA1CN100UB | CAP E 10UF-16V CT-30WX54J/UJ | |
| C2410 | ECA1HM100B | CAP E 10UF-50V CT-30WX54J/UJ | |
| C2414 | ECJ2VB1H223K | CAP C .022UF-K-50V CT-30WX54J /UJ | |
| C2416 | ECJ2FB1H104K | CAP C .1UF-K-50V CT-30WX54J /UJ | |
| C2418 | ECEA1CN100UB | CAP E 10UF-16V CT-30WX54J/UJ | |
| C2451 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2452 | ECJ2VB1H472K | CAP C .0047UF-K-50V | |
| C2453 | ECJ2VB1H223K | CAP C .022UF-K-50V | |
| C2454 | ECJ2VB1H332K | CAP C .0033UF-K-50V | |
| C2455 | ECJ2FB1C684K | CAP C .68UF-Z-16V | |
| C2456 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2457 | ECJ2VB1C104K | CAP C .1UF-K-16V | |
| C2458 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2459 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2460 | ECJ2VB1H103K | CAP C .01UF-K-50V | |
| C2461 | ECA1CM221B | CAP E 10UF-16V | |
| C2462 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2463 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2464 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2465 | ECJ2VB1C104K | CAP C .1UF-K-16V | |
| C2466 | ECJ2FB1C684K | CAP C .68UF-Z-16V | |
| C2467 | ECJ2VB1H332K | CAP C .0033UF-K-50V | |
| C2468 | ECJ2VB1H223K | CAP C .022UF-K-50V | |
| C2469 | ECJ2VB1H472K | CAP C .0047UF-K-50V | |
| C2470 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C2851 | ECA1EM471B | CAP E 470UF-25V | |
| C2852 | ECA1CM221B | CAP E 10UF-16V | |
| C2855 | ECA1EM471B | CAP E 470UF-25V CT-30WX54J/UJ | |
| C2855 | ECA1VM221B | CAP E 220UF-35V | |
| C2857 | EEUFC1C471B | CAP E 470UF-16V | |
| C2859 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C2861 | ECA1CM471B | CAP E 470UF-16V CT-30WX54J/UJ | |
| C2861 | EEUFC1A471B | CAP E 470UF-10V | |
| C2862 | ECA1HM471E | CAP E 470UF-50V | |
| C2862 | ECA1VM471B | CAP E 470UF-35V CT-30WX54J/UJ | |
| C2865 | ECA1CM221B | CAP E 10UF-16V CT-30WX54J/UJ | |
| C2865 | ECA1EM221B | CAP E 220UF-25V | |
| C2867 | EEUFC1A471B | CAP E 470UF-10V | |
| C2869 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C2870 | ECA1CM221B | CAP E 10UF-16V CT-30WX54J/UJ | |
| C2870 | ECA1EM221B | CAP E 220UF-25V | |
| C2872 | EEUFC1A471B | CAP E 470UF-10V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C2874 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C2875 | ECA1CM471B | CAP E 470UF-16V | |
| C2877 | EEUFC1A102B | CAP E 1000UF-10V | |
| C2877 | EEUFC1A471B | CAP E 470UF-10V CT-30WX54J/UJ | |
| C2879 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C2881 | ECJ2VB1H103K | CAP C .01UF-K-50V | |
| C2882 | ECJ2VB1H103K | CAP C .01UF-K-50V | |
| C2884 | ECA0JM222B | CAP E 2200UF-6.3V | |
| C2891 | ECJ2VF1H103Z | CAP C .01UF-Z-50V CT-30WX54J /UJ | |
| C2892 | ECJ2VF1H103Z | CAP C .01UF-Z-50V CT-30WX54J /UJ | |
| C3331 | ECJ2VB1H152K | CAP C .0015UF-K-50V CT-30WX54J/UJ | |
| C3332 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V CT-30WX54J /UJ | |
| C3333 | ECJ2VB1H152K | CAP C .0015UF-K-50V CT-30WX54J/UJ | |
| C3334 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V CT-30WX54J /UJ | |
| C3335 | ECJ2VB1H152K | CAP C .0015UF-K-50V | |
| C3336 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3337 | ECJ2VB1H152K | CAP C .0015UF-K-50V | |
| C3338 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3339 | ECJ2VB1H103K | CAP C .01UF-K-50V | |
| C3340 | ECJ2YB1A105K | CAP C 1.0UF-K-125V | |
| C3341 | ECJ2YB1A105K | CAP C 1.0UF-K-125V | |
| C3342 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3343 | ECJ2VB1H152K | CAP C .0015UF-K-50V | |
| C3344 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3345 | ECJ2VB1H152K | CAP C .0015UF-K-50V | |
| C3346 | ECJ2VB1H103K | CAP C .01UF-K-50V CT-30WX54J /UJ | |
| C3347 | ECJ2YB1A105K | CAP C 1.0UF-K-125V | |
| C3348 | ECJ2YB1A105K | CAP C 1.0UF-K-125V CT-30WX54J /UJ | |
| C3349 | ECJ2VB1H152K | CAP C .0015UF-K-50V | |
| C3350 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3351 | ECJ2VB1H152K | CAP C .0015UF-K-50V | |
| C3352 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3353 | ECJ2YB1A105K | CAP C 1.0UF-K-125V CT-30WX54J /UJ | |
| C3354 | ECJ2VB1H152K | CAP C .0015UF-K-50V CT-30WX54J/UJ | |
| C3355 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V CT-30WX54J /UJ | |
| C3357 | ECJ2VB1H152K | CAP C .0015UF-K-50V CT-30WX54J/UJ | |
| C3358 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V CT-30WX54J /UJ | |
| C3359 | ECA1EM471E | CAP E 470UF-25V | |
| C3360 | ECJ2VB1H152K | CAP C .0015UF-K-50V | |
| C3361 | ECJ2VB1H152K | CAP C .0015UF-K-50V | |
| C3362 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3363 | ECJ2VF1C105Z | CAP C 1.0UF-Z-16V | |
| C3364 | ECJ2YB1A105K | CAP C 1.0UF-K-125V CT-30WX54J /UJ | |
| C3365 | ECJ2YB1A105K | CAP C 1.0UF-K-125V CT-30WX54J /UJ | |
| C3366 | ECJ2YB1A105K | CAP C 1.0UF-K-125V CT-30WX54J /UJ | |
| C3367 | ECJ2YB1A105K | CAP C 1.0UF-K-125V | |
| C3368 | ECJ2YB1A105K | CAP C 1.0UF-K-125V | |
| C3369 | ECJ2YB1A105K | CAP C 1.0UF-K-125V | |
| C3401 | ECJ2VB1H152K | CAP C .0015UF-K-50V | |
| C3402 | ECJ2VB1H152K | CAP C .0015UF-K-50V | |
| C3405 | ECA1HM010B | CAP E 1UF-50V | |
| C3406 | ECA1HM010B | CAP E 1UF-50V | |
| C3801 | ECA1CM101B | CAP E 100UF-16V | |
| C3802 | ECA1VM470B | CAP E 47UF-35V | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C3803 | ECJ2VF1H103Z | CAP C .01UF-Z-50V | |
| C3804 | ECQE2104KF3 | CAP P .10UF-K-200V | |
| C3805 | ECA2DM330B | CAP E 33UF-200V | |
| C3806 | ECQE2474KF3 | CAP P .47UF-K-200V | |
| C3807 | ECQE2474KF3 | CAP P .47UF-K-200V | |
| C3808 | ECKC3D332KBN | CAP C 3300PF-K-2KV | |
| C3809 | ECQE2474KF3 | CAP P .47UF-K-200V | |
| C3811 | ECQE2103KF3 | CAP P .010UF-K-200V | |
| C3812 | ECQE2104KF3 | CAP P .10UF-K-200V | |
| C3813 | ECQE2104KF3 | CAP P .10UF-K-200V | |
| C3814 | ECQE2104KF3 | CAP P .10UF-K-200V | |
| C3815 | ECQE2103KF3 | CAP P .010UF-K-200V | |
| C3816 | ECQE2103KF3 | CAP P .010UF-K-200V | |
| C3817 | ECQE2103KF3 | CAP P .010UF-K-200V | |
| C3825 | ECA2EM010B | CAP E 1UF-250V | |
| C3826 | ECA1VM470B | CAP E 47UF-35V | |
| C3827 | ECJ2VB1H103K | CAP C .01UF-K-50V | |
| C3828 | ECJ2VB1H103K | CAP C .01UF-K-50V | |
| C3829 | ECKR2H102KB5 | CAP C 1000PF-K-500V | |
| C3830 | ECA2EM470E | CAP E 47UF-250V | |
| C5501 | ECEA1CN220UB | CAP E 22UF-16V | |
| C5506 | ECJ2VB1C104K | CAP C .1UF-K-16V | |
| C5507 | ECEA1CN220UB | CAP E 22UF-16V | |
| C5801 | ECA1CM101B | CAP E 100UF-16V | |
| C5803 | ECA1CM101B | CAP E 100UF-16V | |
| C5804 | ECJ2VB1C104K | CAP C .1UF-K-16V | |
| C5805 | ECA1VM470B | CAP E 47UF-35V | |
| C5807 | ECQB1H104JF3 | CAP P .10UF-J-50V | |
| C5808 | ECA1VM470B | CAP E 47UF-35V | |
| DIODES | | | |
| D005 | MA3X152K0L | DIODE | |
| D009 | MA2C165001VT | DIODE | |
| D012 | MAZ40360MF | DIODE ZENER | |
| D460 | MA2C165001VT | DIODE | |
| D461 | MA2C165001VT | DIODE | |
| D462 | MAZ40300MF | DIODE ZENER | |
| D463 | MA2C165001VT | DIODE | |
| D465 | MAZ40390MF | DIODE ZENER | |
| D466 | MA2C165001VT | DIODE | |
| D468 | MA2C165001VT | DIODE | |
| D469 | MAZ40300MF | DIODE ZENER | |
| D470 | MA2C165001VT | DIODE | |
| D471 | MA2C700A0F | DIODE | |
| D501 | MAZ41500MF | DIODE ZENER | |
| D502 | MAZ41500MF | DIODE ZENER | |
| D503 | B0HALP000002 | DIODE FAST RECOVERY | |
| D506 | B0JAME000058 | DIODE SCHOTTKY BARRIER | |
| D507 | B0JAME000058 | DIODE SCHOTTKY BARRIER | |
| D508 | B0HAGV000004 | DIODE FAST RECOVERY | |
| D509 | MA2C165001VT | DIODE | |
| D510 | MAZ40820MF | DIODE ZENER | ⚠ |
| D511 | B0EALV000001 | DIODE RECTIFIER | |
| D513 | MAZ42700MF | DIODE ZENER | |
| D516 | MAZ40390MF | DIODE ZENER | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D517 | B0HALP000002 | DIODE FAST RECOVERY | |
| D518 | MA2C165001VT | DIODE | |
| D519 | B0HALP000002 | DIODE FAST RECOVERY | |
| D521 | MAZ41800MF | DIODE ZENER | |
| D522 | B0AAGR000002 | DIODE SWITCHING | |
| D523 | FMRG5HSLF731 | DIODE | |
| D524 | MA2C165001VT | DIODE | |
| D525 | B0HALP000002 | DIODE FAST RECOVERY | |
| D528 | B0HALP000002 | DIODE FAST RECOVERY | |
| D532 | MA2C165001VT | DIODE | |
| D533 | MA2C700A0F | DIODE | |
| D534 | MA2C165001VT | DIODE | |
| D539 | MA2C165001VT | DIODE | |
| D540 | B0HALP000002 | DIODE FAST RECOVERY | |
| D541 | B0JAME000058 | DIODE SCHOTTKY BARRIER | |
| D542 | B0HACW000002 | DIODE FAST RECOVERY | |
| D543 | MA2C165001VT | DIODE | |
| D544 | B0AAGR000002 | DIODE SWITCHING | |
| D545 | B0AAGR000002 | DIODE SWITCHING | |
| D549 | MA2C165001VT | DIODE | |
| D556 | B0HAHM000008 | DIODE FAST RECOVERY | |
| D584 | MA2C165001VT | DIODE | |
| D701 | MA2C029TAF | DIODE | |
| D702 | MA2C029TAF | DIODE | |
| D801 | B0FBAT000005 | DIODE RECTIFIER | ⚠ |
| D803 | D4DDF1R50001 | DIODE | ⚠ |
| D804 | B0EAKL000008 | DIODE RECTIFIER | |
| D805 | B0EAKL000008 | DIODE RECTIFIER | |
| D807 | MA2C165001VT | DIODE | |
| D809 | ERZV10D391 | VARISTOR SURGE ABSORBER | ⚠ |
| D811 | B0EAKL000008 | DIODE RECTIFIER | |
| D814 | MA2C165001VT | DIODE | |
| D815 | MA2C165001VT | DIODE | |
| D816 | MA2C165001VT | DIODE | |
| D817 | MAZ42200LF | DIODE ZENER | |
| D819 | MA2C165001VT | DIODE | |
| D820 | AU01ZV0 | DIODE | |
| D822 | B0HAMM000036 | DIODE FAST RECOVERY | |
| D823 | MAZ406800F | DIODE ZENER | |
| D824 | B0BA01000046 | DIODE VOLTAGE REGULATION | |
| D825 | B0HANR000003 | DIODE FAST RECOVERY | |
| D827 | B0HANM000016 | DIODE FAST RECOVERY | |
| D828 | MA3D690 | DIODE | |
| D829 | S2L20UF04P12 | DIODE | |
| D830 | MA3D690 | DIODE | |
| D831 | MAZ41300MF | DIODE ZENER | |
| D832 | MAZ41100HF | DIODE ZENER | |
| D833 | MA2C165001VT | DIODE | |
| D834 | MAZ40360MF | DIODE ZENER | |
| D835 | MA2C165001VT | DIODE | |
| D836 | MAZ41600MF | DIODE ZENER | |
| D837 | B0HAGV000004 | DIODE FAST RECOVERY | |
| D844 | MA2C165001VT | DIODE | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D845 | MAZ41500MF | DIODE ZENER | |
| D850 | MA2C165001VT | DIODE | |
| D857 | MA2C165001VT | DIODE | |
| D859 | MA2C165001VT | DIODE | |
| D861 | AU02ZV0 | DIODE | |
| D862 | MA2C165001VT | DIODE | |
| D863 | MAZ43300MF | DIODE ZENER | |
| D866 | B0EAKT000018 | DIODE RECTIFIER | |
| D867 | MA2C165001VT | DIODE | |
| D875 | MA3D690 | DIODE | |
| D876 | B0JCME000025 | DIODE SCHOTTKY BARRIER | |
| D1001 | LN81RPH | DIODE | |
| D1051 | MA2C165001VT | DIODE | |
| D1052 | MA2C165001VT | DIODE | |
| D1401 | MA3X152E0L | DIODE | |
| D1503 | MA3X152K0L | DIODE | |
| D1550 | MA2C700A0F | DIODE | |
| D1555 | B0EAKL000008 | DIODE RECTIFIER | |
| D1560 | MAZ40360MF | DIODE ZENER | |
| D2301 | MAZ42700MF | DIODE ZENER | |
| D2302 | MA3X152K0L | DIODE | |
| D2303 | MA2C16700E | DIODE CT-30WX54J/UJ | |
| D2305 | MA3X152K0L | DIODE | |
| D2307 | MA2C16700E | DIODE CT-30WX54J/UJ | |
| D2308 | MAZ42700MF | DIODE ZENER | |
| D2325 | MA3X152K0L | DIODE | |
| D2351 | MA2C16700E | DIODE | |
| D2852 | B0JCME000025 | DIODE SCHOTTKY BARRIER | |
| D2856 | B0JCME000025 | DIODE SCHOTTKY BARRIER | |
| D2858 | B0JCME000025 | DIODE SCHOTTKY BARRIER | |
| D2860 | B0JCME000025 | DIODE SCHOTTKY BARRIER | |
| D2861 | B0JAME000058 | DIODE SCHOTTKY BARRIER | |
| D2862 | B0JCME000025 | DIODE SCHOTTKY BARRIER CT-30WX54J/UJ | |
| D2881 | MA2C165001VT | DIODE | |
| D2882 | MA2C165001VT | DIODE | |
| D2883 | MA2C165001VT | DIODE | |
| D2884 | MA2C165001VT | DIODE | |
| D3301 | MAZ31100ML | DIODE ZENER CT-30WX54J/UJ | |
| D3302 | MAZ31100ML | DIODE ZENER CT-30WX54J/UJ | |
| D3304 | MAZ31100ML | DIODE ZENER CT-30WX54J/UJ | |
| D3306 | MAZ31100ML | DIODE ZENER CT-30WX54J/UJ | |
| D3307 | MAZ31100ML | DIODE ZENER CT-30WX54J/UJ | |
| D3308 | MAZ31100ML | DIODE ZENER CT-30WX54J/UJ | |
| D3309 | MAZ31100ML | DIODE ZENER | |
| D3310 | MAZ31100ML | DIODE ZENER | |
| D3312 | MAZ31100ML | DIODE ZENER | |
| D3314 | MAZ31100ML | DIODE ZENER | |
| D3316 | MAZ31100ML | DIODE ZENER | |
| D3317 | MAZ31100ML | DIODE ZENER | |
| D3318 | MAZ31100ML | DIODE ZENER | |
| D3319 | MAZ31100ML | DIODE ZENER | |
| D3320 | MAZ31100ML | DIODE ZENER | |
| D3321 | MAZ31100ML | DIODE ZENER | |
| D3322 | MAZ31100ML | DIODE ZENER CT-30WX54J/UJ | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D3323 | MAZ31100ML | DIODE ZENER | |
| D3324 | MAZ31100ML | DIODE ZENER CT-30WX54J/UJ | |
| D3325 | MAZ31100ML | DIODE ZENER | |
| D3326 | MAZ31100ML | DIODE ZENER | |
| D3328 | MAZ31100ML | DIODE ZENER CT-30WX54J/UJ | |
| D3329 | MAZ31100ML | DIODE ZENER CT-30WX54J/UJ | |
| D3330 | MAZ31100ML | DIODE ZENER | |
| D3332 | CVS20A120MTA | DIODE | |
| D3334 | CVS20A120MTA | DIODE | |
| D3335 | MAZ31100ML | DIODE ZENER | |
| D3336 | MAZ31100ML | DIODE ZENER | |
| D3403 | MAZ31100ML | DIODE ZENER | |
| D3404 | MAZ31100ML | DIODE ZENER | |
| D3405 | MAZ31100ML | DIODE ZENER | |
| D3406 | MAZ31100ML | DIODE ZENER | |
| D3407 | MAZ31100ML | DIODE ZENER | |
| D3408 | MAZ31100ML | DIODE ZENER | |
| D3409 | MAZ31100ML | DIODE ZENER | |
| D3410 | MAZ31100ML | DIODE ZENER | |
| D3801 | MAZ40620L3TV | DIODE ZENER | |
| D3805 | MA2C18800E | DIODE | |
| D3807 | MA2C18800E | DIODE | |
| D3812 | MAZ41300MF | DIODE ZENER | |
| D3813 | B0HAGP000003 | DIODE FAST RECOVERY | |
| D3816 | MA2C18800E | DIODE | |
| D3817 | MA2C18800E | DIODE | |
| D3819 | MA2C0290AF | DIODE | |
| D3820 | MA2C0290AF | DIODE | |
| D3821 | MA2C0290AF | DIODE | |
| D3823 | B0HALP000002 | DIODE FAST RECOVERY | |
| D3824 | B0HAGP000003 | DIODE FAST RECOVERY | |
| D3831 | B0HALP000002 | DIODE FAST RECOVERY | |
| D3833 | B0HALP000002 | DIODE FAST RECOVERY | |
| D3834 | MA2C18800E | DIODE | |
| D3835 | MA2C18800E | DIODE | |
| D3836 | MA2C18800E | DIODE | |
| D3837 | MA2C18800E | DIODE | |
| D3838 | MA2C18800E | DIODE | |
| D3839 | MA2C18800E | DIODE | |
| D3844 | ERZV07D361 | VARISTOR SURGE ABSORBER | |
| D3850 | MA2C18800E | DIODE | |
| FUSES | | | |
| F801 | XBA2A00101 | FUSE 6.3A 125V | ⚠ |
| INTEGRATED CIRCUITS | | | |
| IC002 | C3EBKC000008 | INTEGRATED CIRCUIT | |
| IC002 | TVR2AJ201S | EEPROM CT-30WC14J/UJ | |
| IC002 | TVR2AJ202S | EEPROM CT-30WX54J/UJ | |
| IC006 | C1AB00000441 | INT. CKT. | |
| IC451 | C1AA00000665 | INT CKT | |
| IC500 | C0AABB000107 | IC (OPERATIONAL AMPLIFIER) | |
| IC501 | AN1431T-TA | INT CKT | |
| IC502 | AN5751N | INT CKT | |
| IC503 | 0N3171R | INT CKT | |
| IC504 | 0N3171R | INT CKT | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| IC507 | AN6914 | INT CKT | |
| IC801 | C5HABZZ00126 | INT CKT | |
| IC802 | C0EAS0000024 | IC (VOLTAGE DETECTING) | |
| IC804 | B0EBKM000016 | DIODE RECTIFIER | |
| IC805 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC811 | 0N3171R | INT CKT | ⚠ |
| IC1401 | C0BBBA000043 | IC (COMPARATOR) | |
| IC1501 | C0BBBA000043 | IC (COMPARATOR) | |
| IC1502 | C0ABBA000073 | IC (OPERATIONAL AMPLIFIER) | |
| IC1503 | C0BBBA000043 | IC (COMPARATOR) | |
| IC2201 | AN5849S-E1V | INT CKT | |
| IC2301 | C1AA00000645 | INT CKT | |
| IC2303 | C0BBBA000043 | IC (COMPARATOR) CT-30WX54J CT-30WX54UJ | |
| IC2305 | C0ABBA000073 | IC (OPERATIONAL AMPLIFIER) | |
| IC2451 | NJW1164MPTE1 | INT. CKT. | |
| IC2851 | C0CACKG00003 | IC (VOLTAGE REGULATOR) | |
| IC2852 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC2854 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC2855 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC2856 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC2857 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC3801 | C1AA00000662 | INT CKT | |
| IC5801 | AN15530B | INT CKT | |
| IC5802 | C0AABB000107 | IC (OPERATIONAL AMPLIFIER) | |
| | | COILS | |
| L002 | ELESN330JA | COIL PEAKING 33UH | |
| L009 | ELELN330KA | COIL PEAKING 33UH | |
| L011 | ELELN330KA | COIL PEAKING 33UH | |
| L452 | EXCELDR35V | FERRITE BEAD | |
| L453 | ELC18B152L | COIL CHOKE | |
| L454 | EXCELSA35T | FERRITE BEAD | |
| L501 | EXCELSA24T | FERRITE BEAD | |
| L502 | EXCELSA24T | FERRITE BEAD | |
| L503 | ELC12D103E | COIL CHOKE | |
| L504 | EXCELSA26T | FERRITE BEAD | |
| L505 | EXCELSA26T | FERRITE BEAD | |
| L506 | EXCELSA24T | FERRITE BEAD | |
| L509 | ELC09D100F | COIL CHOKE 10UH | |
| L510 | ELC12D103E | COIL CHOKE | |
| L514 | EXCELSA35T | FERRITE BEAD | |
| L515 | ELC09D471F | COIL CHOKE 470UH | |
| L516 | ELC09D101DF | COIL CHOKE 100UH | |
| L516 | ELC09D101F | COIL CHOKE 100UH | |
| L522 | ELC18E121L | COIL CHOKE 120UH | |
| L552 | G0D8R5000001 | COIL | |
| L553 | EXCELSA24T | FERRITE BEAD | |
| L554 | ELH5L8116 | COIL LINEARITY | |
| L561 | G0A332DA0017 | COIL LINE CHOKE | |
| L812 | EXCELSA39V | FERRITE BEAD | |
| L813 | EXCELSA39V | FERRITE BEAD | |
| L816 | EXCELSA39E | FERRITE BEAD | |
| L817 | EXCELSA24T | FERRITE BEAD | |
| L818 | EXCELSA24T | FERRITE BEAD | |
| L819 | EXCELDR35V | FERRITE BEAD | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| L821 | EXCELSA39E | FERRITE BEAD | |
| L823 | TLUADTB820K | COIL | |
| L824 | EXCELDR35V | FERRITE BEAD | |
| L825 | ELC09D470DF | COIL CHOKE 47UH | |
| L826 | ELC09D101DF | COIL CHOKE 100UH | |
| L827 | ELC09D101DF | COIL CHOKE 100UH | |
| L829 | EXCELDR25V | FERRITE BEAD | |
| L830 | EXCELDR35V | FERRITE BEAD | |
| L831 | EXCELDR35V | FERRITE BEAD | |
| L836 | EXCELDR35V | FERRITE BEAD | |
| L845 | G0A101ZA0041 | COIL LINE CHOKE | |
| L846 | ELC09D220DF | COIL CHOKE 22UH | |
| L901 | TALV35VB100J | COIL | |
| L903 | EXCELSA35T | FERRITE BEAD | |
| L904 | EXCELSA35T | FERRITE BEAD | |
| L906 | TALV35VB330J | COIL | |
| L2201 | ELESN100JA | COIL PEAKING 10UH | |
| L2304 | ELC12E390 | COIL CHOKE 39UH | |
| L2305 | ELC12E390 | COIL CHOKE 39UH | |
| L2306 | EXCELDR35V | FERRITE BEAD | |
| L2307 | EXCELDR35V | FERRITE BEAD | |
| L2341 | G0A330G00010 | COIL LINE CHOKE | |
| L2342 | G0A330G00010 | COIL LINE CHOKE | |
| L2854 | G0A101ZA0041 | COIL LINE CHOKE | |
| L2855 | G0A220GA0002 | COIL LINE CHOKE | |
| L2860 | G0A470ZA0041 | COIL LINE CHOKE | |
| L2863 | G0A470ZA0041 | COIL LINE CHOKE | |
| L2866 | G0A470ZA0041 | COIL LINE CHOKE | |
| L2868 | G0A470ZA0041 | COIL LINE CHOKE | |
| L2869 | G0A470ZA0041 | COIL LINE CHOKE | |
| L3303 | G0BYYYY00016 | TRANSFORMER | |
| L3304 | G0BYYYY00016 | TRANSFORMER | |
| L3401 | G0BYYYY00016 | TRANSFORMER | |
| L3403 | EXCELSA35T | FERRITE BEAD | |
| L3801 | TALV35VB2R2J | COIL | |
| L3802 | TALV35VB2R2J | COIL | |
| L3803 | TALV35VB2R2J | COIL | |
| L3804 | EXCELSA24T | FERRITE BEAD | |
| L3806 | EXCELDR35V | FERRITE BEAD | |
| L3807 | EXCELDR35V | FERRITE BEAD | |
| L3812 | EXCELDR35V | FERRITE BEAD | |
| L3813 | EXCELDR35V | FERRITE BEAD | |
| L3825 | EXCELSA24T | FERRITE BEAD | |
| L3826 | EXCELSA35T | FERRITE BEAD | |
| L3830 | EXCELSA24T | FERRITE BEAD | |
| LF801 | G0B650H00002 | COIL | ⚠ |
| LF802 | G0B332H00002 | COIL | ⚠ |
| LF803 | G0B332H00002 | COIL | ⚠ |
| TRANSISTORS | | | |
| Q002 | UNR221100L | TRANSISTOR | |
| Q003 | UNR211500L | TRANSISTOR | |
| Q013 | 2PD601AR-115 | TRANSISTOR | |
| Q404 | 2PD601AR-115 | TRANSISTOR | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| Q405 | 2PD601AR-115 | TRANSISTOR | |
| Q406 | 2PD601AR-115 | TRANSISTOR | |
| Q459 | 2SC1473AR | TRANSISTOR | |
| Q501 | B1CEML000001 | TRANSISTOR | |
| Q511 | 2PB709AR-115 | TRANSISTOR | |
| Q512 | 2PD601AR-115 | TRANSISTOR | |
| Q513 | 2PD601AR-115 | TRANSISTOR | |
| Q514 | 2PD601AR-115 | TRANSISTOR | |
| Q515 | 2PB709AR-115 | TRANSISTOR | |
| Q516 | 2PD601AR-115 | TRANSISTOR | |
| Q517 | 2PB709AR-115 | TRANSISTOR | |
| Q551 | 2SC5686000LK | TRANSISTOR | |
| Q556 | B1DAFU000002 | TRANSISTOR | |
| Q560 | B1DGDN000001 | TRANSISTOR | |
| Q561 | B1DEDQ000009 | TRANSISTOR | |
| Q563 | B1BAAT000001 | TRANSISTOR | |
| Q564 | 2SC1685QRSTA | TRANSISTOR | |
| Q565 | 2SC3311ASTA | TRANSISTOR | |
| Q566 | 2SC3311ASTA | TRANSISTOR | |
| Q701 | B1DEDP000003 | TRANSISTOR | |
| Q702 | 2PD601AR-115 | TRANSISTOR | |
| Q703 | 2PD601AR-115 | TRANSISTOR | |
| Q704 | 2PB709AR-115 | TRANSISTOR | |
| Q802 | 2SC1685QRSTA | TRANSISTOR | |
| Q803 | 2SC1685QRSTA | TRANSISTOR | |
| Q804 | UNR221100L | TRANSISTOR | |
| Q815 | 2PD601AR-115 | TRANSISTOR | |
| Q816 | 2PD601AR-115 | TRANSISTOR | |
| Q820 | 2SD2177RTA | TRANSISTOR | |
| Q821 | 2SB14340RA | TRANSISTOR | |
| Q822 | 2SA1309ATA | TRANSISTOR | |
| Q823 | 2PD601AR-115 | TRANSISTOR | |
| Q824 | 2SA1309ATA | TRANSISTOR | |
| Q825 | 2PD601AR-115 | TRANSISTOR | |
| Q826 | 2PD601AR-115 | TRANSISTOR | |
| Q827 | 2SB1011RL | TRANSISTOR | |
| Q831 | 2SA1309ATA | TRANSISTOR | |
| Q900 | 2PD601AR-115 | TRANSISTOR | |
| Q901 | 2PD601AR-115 | TRANSISTOR | |
| Q903 | 2PD601AR-115 | TRANSISTOR | |
| Q904 | 2PB709AR-115 | TRANSISTOR | |
| Q905 | 2PD601AR-115 | TRANSISTOR | |
| Q906 | 2SD592A | TRANSISTOR | |
| Q907 | 2SB621ATA | TRANSISTOR | |
| Q908 | B1BCBL000018 | TRANSISTOR | |
| Q909 | B1BABL000016 | TRANSISTOR | |
| Q910 | 2PB709AR-115 | TRANSISTOR | |
| Q911 | 2PD601AR-115 | TRANSISTOR | |
| Q912 | 2SC3311ASTA | TRANSISTOR | |
| Q913 | 2SA1309ASTA | TRANSISTOR | |
| Q1401 | 2PD601AR-115 | TRANSISTOR | |
| Q1501 | 2PD601AR-115 | TRANSISTOR | |
| Q1502 | 2PB709AR-115 | TRANSISTOR | |
| Q1504 | 2PD601AR-115 | TRANSISTOR | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| Q1505 | 2PB709AR-115 | TRANSISTOR | |
| Q1511 | 2PD601AR-115 | TRANSISTOR | |
| Q1512 | 2PB709AR-115 | TRANSISTOR | |
| Q2301 | 2PD601AR-115 | TRANSISTOR | |
| Q2301 | UNR221600L | TRANSISTOR CT-30WX54J/UJ | |
| Q2302 | 2PD601AR-115 | TRANSISTOR | |
| Q2303 | UNR211500L | TRANSISTOR | |
| Q2304 | 2PD601AR-115 | TRANSISTOR | |
| Q2304 | UNR221600L | TRANSISTOR CT-30WX54J/UJ | |
| Q2305 | 2PD601AR-115 | TRANSISTOR | |
| Q2306 | 2PB709AR-115 | TRANSISTOR | |
| Q2307 | UNR211500L | TRANSISTOR | |
| Q2308 | 2PD601AR-115 | TRANSISTOR | |
| Q2310 | 2PB709AR-115 | TRANSISTOR | |
| Q2311 | 2PB709AR-115 | TRANSISTOR CT-30WX54J/UJ | |
| Q2313 | UNR221100L | TRANSISTOR CT-30WX54J/UJ | |
| Q2314 | 2PD601AR-115 | TRANSISTOR | |
| Q2314 | UNR221600L | TRANSISTOR CT-30WX54J/UJ | |
| Q2317 | UNR221600L | TRANSISTOR | |
| Q2318 | UNR221600L | TRANSISTOR | |
| Q2325 | 2PD601AR-115 | TRANSISTOR | |
| Q2327 | 2PD601AR-115 | TRANSISTOR | |
| Q2451 | 2PD601AR-115 | TRANSISTOR | |
| Q2452 | 2PD601AR-115 | TRANSISTOR | |
| Q2881 | UNR211D00L | TRANSISTOR | |
| Q2893 | UNR211500L | TRANSISTOR CT-30WX54J/UJ | |
| Q3801 | 2SA1767Q | TRANSISTOR | |
| Q3802 | 2SA1767Q | TRANSISTOR | |
| Q3803 | 2SA1767Q | TRANSISTOR | |
| Q3804 | 2SC58630QL | TRANSISTOR | |
| Q3805 | 2SC58630QL | TRANSISTOR | |
| Q3806 | 2SC58630QL | TRANSISTOR | |
| Q3807 | B1BABL000016 | TRANSISTOR | |
| Q3808 | 2SC2258RL | TRANSISTOR | |
| Q3809 | 2PB709AR-115 | TRANSISTOR | |
| Q3810 | 2PB709AR-115 | TRANSISTOR | |
| Q3811 | 2PB709AR-115 | TRANSISTOR | |
| Q3812 | 2PD601AR-115 | TRANSISTOR | |
| Q3813 | 2PD601AR-115 | TRANSISTOR | |
| Q3814 | 2PD601AR-115 | TRANSISTOR | |
| RELAYS | | | |
| RL801 | K6B1AGA00043 | RELAY | ⚠ |
| RL802 | TSE10814 | RELAY | ⚠ |
| RL803 | K6B1AGA00042 | RELAY | ⚠ |
| RL804 | TSEH0034 | RELAY | |
| RESISTORS | | | |
| R032 | ERJ6GEYJ333V | RES M 33K-J-1/10W | |
| R041 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R075 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R076 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R077 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R096 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R098 | ERJ6GEYJ220V | RES M 22-J-1/10W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R099 | ERJ6GEYJ220V | RES M 22-J-1/10W | |
| R100 | ERJ6GEYJ242V | RES M 2.4K-J-1/10W | |
| R101 | ERJ6GEYJ392V | RES M 3.9K-J-1/10W | |
| R102 | ERJ6GEYJ682V | RES M 6.8K-J-1/10W | |
| R103 | ERJ6GEYJ822V | RES M 8.2K-J-1/10W | |
| R104 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R106 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R107 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R108 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R109 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R121 | ERDS1VJ680T | RES C 68-J-1/2W | |
| R121 | ERDS2TJ680T | RES C 68-J-1/4W CT-30WX54J/UJ | |
| R122 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R123 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R124 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R125 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R126 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R127 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R129 | ERJ6GEYJ101V | RES M 100-J-1/10W CT-30WX54J /UJ | |
| R451 | EROS2THF1201 | RES M 1.2K-F-1/4W | |
| R452 | EROS2THF2201 | RES M 2.2K-F-1/4W | |
| R453 | ERJ6GEYJ822V | RES M 8.2K-J-1/10W | |
| R454 | ERJ6ENF1602V | RES M 16K-F-1/4W | |
| R455 | ERG2FJ331H | RES M 330-J-2W | |
| R456 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R457 | ERDS1FJ560T | RES C 56-J-1/2W | |
| R458 | ERDS1FJ4R7P | RES C 4.7-J-1/2W | |
| R459 | ERDS1FJ4R7P | RES C 4.7-J-1/2W | |
| R461 | ERJ6GEYJ272V | RES M 2.7K-J-1/10W | |
| R462 | ERJ6GEYJ563V | RES M 56K-J-1/10W | |
| R463 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R464 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R465 | ERJ6GEYJ224V | RES M 220K-J-1/10W | |
| R466 | ERDS1FJ4R7P | RES C 4.7-J-1/2W | |
| R467 | ERDS1FJ4R7P | RES C 4.7-J-1/2W | |
| R468 | ERJ6GEYJ272V | RES M 2.7K-J-1/10W | |
| R469 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R470 | ERJ6GEYJ272V | RES M 2.7K-J-1/10W | |
| R471 | ERJ6ENF1802V | RES M 18K-F-1/10W | |
| R472 | ERJ6ENF1501V | RES M 1.5K-F-1/10W | |
| R473 | ERJ6GEYJ272V | RES M 2.7K-J-1/10W | |
| R474 | ERJ6GEYJ563V | RES M 56K-J-1/10W | |
| R475 | ERJ6GEYJ224V | RES M 220K-J-1/10W | |
| R476 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R501 | ERDS2TJ104T | RES C 100K-J-1/4W | |
| R502 | ERG2FJ470H | RES M 47-J-2W | |
| R503 | ERG3FJ221H | RES M 220-J-3W | |
| R504 | ERDS2TJ680T | RES C 68-J-1/4W | |
| R505 | ERG1SJ102P | RES M 1K-J-1W | |
| R507 | ERX2FJR22H | RES M .22-J-2W | |
| R510 | ERG3FJ391H | RES M 391-J-3W | |
| R512 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R513 | ERDS2TJ471T | RES C 470-J-1/4W | |
| R514 | EROS2THF2552 | RES M 25.5K-F-1/4W | ⚠ |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| **R515** | **EROS2THF2552** | **RES M 25.5K-F-1/4W** | ⚠ |
| **R516** | **ERDS2TJ101T** | **RES C 100-J-1/4W** | ⚠ |
| **R517** | **ERC14GK103V** | **RES M 10K-J-1W** | |
| **R518** | **ERDS2TJ103T** | **RES C 10K-J-1/4W** | |
| **R519** | **ERDS2TJ221T** | **RES C 220-J-1/4W** | |
| **R520** | **EROS2THF2552** | **RES M 25.5K-F-1/4W** | ⚠ |
| **R521** | **ERJ6GEYJ103V** | **RES M 10K-J-1/10W** | |
| **R522** | **ERJ6GEYJ392V** | **RES M 3.9K-J-1/10W** | |
| **R523** | **ERJ6GEYJ473V** | **RES M 47K-J-1/10W** | |
| **R524** | **ERJ6GEYJ103V** | **RES M 10K-J-1/10W** | |
| **R525** | **ERJ6GEYJ182V** | **RES M 1.8K-J-1/10W** | |
| **R526** | **ERJ6GEYJ103V** | **RES M 10K-J-1/10W** | |
| **R527** | **ERJ6GEYJ222V** | **RES M 25.5K-F-1/4W** | |
| **R528** | **ERDS2TJ473T** | **RES C 47K-J-1/4W** | |
| **R529** | **ERDS2TJ473T** | **RES C 47K-J-1/4W** | |
| **R530** | **ERJ6GEYJ183V** | **RES M 18K-J-1/10W** | |
| **R531** | **ERDS2TJ221T** | **RES C 220-J-1/4W** | |
| **R533** | **ERDS2TJ102T** | **RES C 1K-J-1/4W** | |
| **R534** | **ERDS2TJ152T** | **RES C 1.5K-J-1/4W** | |
| **R535** | **ERDS2TJ472T** | **RES C 4.7K-J-1/4W** | |
| **R536** | **ERDS2TJ221T** | **RES C 220-J-1/4W** | |
| **R537** | **ERDS2TJ103T** | **RES C 10K-J-1/4W** | |
| **R538** | **ERDS2TJ472T** | **RES C 4.7K-J-1/4W** | |
| **R540** | **ERC14GK334V** | **RES C 330K-K-1/4W** | |
| **R541** | **ERDS2TJ101T** | **RES C 100-J-1/4W** | |
| **R542** | **ERDS2TJ103T** | **RES C 10K-J-1/4W** | |
| **R543** | **ERDS2TJ103T** | **RES C 10K-J-1/4W** | |
| **R547** | **ERG1SJ332P** | **RES M 3300-J-1W** | |
| **R548** | **ERG3FJ103H** | **RES M 10K-J-3W** | |
| **R549** | **ERG3FJ102H** | **RES M 1K-J-3W** | |
| **R550** | **ERDS2TJ122T** | **RES C 1.2K-J-1/4W** | |
| **R551** | **ERC14GK184V** | **RES C 180K-K-1/4** | |
| **R552** | **ERC14GK184V** | **RES C 180K-K-1/4** | |
| **R553** | **ERDS2TJ101T** | **RES C 100-J-1/4W** | |
| **R557** | **ERJ6GEYJ103V** | **RES M 10K-J-1/10W** | |
| **R558** | **ERDS2TJ473T** | **RES C 47K-J-1/4W** | |
| **R559** | **ERC12GK104V** | **RES C 100K-K-1/2W** | |
| **R560** | **ERC12GK225V** | **RES C 2.2M-K-1/2W** | |
| **R560** | **ERDS2TJ102T** | **RES C 1K-J-1/4W** | |
| **R561** | **EROS2THF2552** | **RES M 25.5K-F-1/4W** | ⚠ |
| **R562** | **ERDS2TJ153T** | **RES C 15K-J-1/4W** | |
| **R563** | **ERDS2TJ102T** | **RES C 1K-J-1/4W** | |
| **R563** | **ERG2FJ123H** | **RES M 12K-J-2W** | |
| **R564** | **ERDS2TJ101T** | **RES C 100-J-1/4W** | |
| **R565** | **ERDS2TJ560T** | **RES C 56-J-1/4W** | |
| **R568** | **ERDS2TJ473T** | **RES C 47K-J-1/4W** | |
| **R568** | **ERJ6GEYJ103V** | **RES M 10K-J-1/10W** | |
| **R569** | **ERJ6GEYJ223V** | **RES M 22K-J-1/10W** | |
| **R570** | **ERDS2TJ103T** | **RES C 10K-J-1/4W** | |
| **R572** | **ERJ6GEYJ104V** | **RES M 100K-J-1/10W** | |
| **R573** | **ERC14GK101V** | **RES C 100-K-1/4W** | |
| **R574** | **ERJ6GEYJ103V** | **RES M 10K-J-1/10W** | |
| **R575** | **ERJ6GEYJ102V** | **RES M 1K-J-1/10W** | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R576 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R577 | EROS2THF2703 | RES M 270K-F-1/4W | |
| R578 | ERJ6GEYJ331V | RES M 330-J-1/10W | |
| R579 | ERDS2TJ392T | RES C 3.9K-J-1/4W | |
| R580 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R581 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R582 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R583 | ERJ6ENF1501V | RES M 1.5K-F-1/10W | |
| R584 | ERJ6ENF2201V | RES M 2.2K-F-1/10W | |
| R586 | EROS2THF2003 | RES M 200K-F-1/4W | |
| R587 | ERJ6GEYJ681V | RES M 680-J-1/10W | |
| R589 | ERJ6GEYJ392V | RES M 3.9K-J-1/10W | |
| R590 | ERJ6GEYJ331V | RES M 330-J-1/10W | |
| R591 | ERDS2TJ100T | RES C 10-J-1/4W | |
| R592 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R593 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R594 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R595 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R597 | ERF5AJ680 | RES W 68-J-5W | |
| R598 | ERX12SJR22P | RES M .22-J-1/2W | |
| R599 | ERX12SZJR15P | RES M .15-J-1/2W | |
| R701 | ERQ14AJ220P | RES F 22-J-1/4W | |
| R702 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R703 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R704 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R705 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R718 | ERG2FJ223H | RESM 22K-J-2W | |
| R732 | EROS2THF6342 | RES M 63.4K-F-1/4W | |
| R733 | EROS2THF6342 | RES M 63.4K-F-1/4W | |
| R734 | EROS2THF1542 | RES M 15.4KF-1/4W | |
| R735 | ERDS1FJ220P | RES C 22-F-1/2W | |
| R736 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R784 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R785 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R786 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R787 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R800 | ERU5TCK1R5T | RES F 1.5-K-5W | ⚠ |
| R801 | ERC14GK824V | RES C 820K-K-1/4W | |
| R802 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R803 | ERDS2TJ680T | RES C 68-J-1/4W | |
| R804 | ERDS2TJ331T | RES C 330-J-1/4W | |
| R805 | ERDS2TJ473T | RES C 47K-J-1/4W | |
| R806 | ERDS2TJ473T | RES C 47K-J-1/4W | |
| R807 | ERDS2TJ820T | RES C 82-J-1/4W | |
| R808 | ERDS2TJ680T | RES C 68-J-1/4W | |
| R809 | ERDS2TJ472T | RES C 4.7K-J-1/4W | |
| R810 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R811 | ERDS2TJ472T | RES C 4.7K-J-1/4W | |
| R812 | ERDS2TJ473T | RES C 47K-J-1/4W | |
| R814 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R815 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R815 | ERJ6GEYJ333V | RES M 33K-J-1/10W | |
| R816 | ERD75TAJ825 | RES C 8.2MEG-J-3/4W | ⚠ |
| R817 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |

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| R317 | ERJ3GEYJ222V | RES M 2.2K J 1/16W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R818 | ERDS2TJ222T | RES C 2.2K-J-1/4W | |
| R819 | ERDS2TJ391T | RES C 390-J-1/4W | |
| R820 | ERJ6GEYJ122V | RES M 1.2K-J-1/10W | |
| R830 | ERDS1FJ330T | RES C 30-J-1/2W | |
| R831 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R832 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R833 | ERJ6GEYJ470V | RES M 47-J-1/10W | |
| R834 | ERDS2TJ473T | RES C 47K-J-1/4W | |
| R835 | ERJ6GEYJ392V | RES M 3.9K-J-1/10W | |
| R840 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R841 | ERQ12HKR22P | RES F .22-K-1/2W | |
| R842 | ERQ12HKR22P | RES F .22-K-1/2W | |
| R844 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R845 | ERDS1FJ222T | RES C 2200-J-1/2W | |
| R846 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R847 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R848 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R849 | ERDS2TJ223T | RES C 22K-J-1/4W | |
| R849 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R850 | ERDS2TJ152T | RES C 1.5K-J-1/4W | |
| R851 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R852 | ER050PHF2702 | RES M 27-F-1/2W | |
| R853 | EROS2THF3601 | RES M 3.6K-F-1/4W | |
| R855 | ERDS2TJ683T | RES C 68K-J-1/4W | |
| R856 | ERJ6GEYJ123V | RES M 12K-J-1/10W | |
| R857 | ERX1SJ1R2P | RES M 1.2-J-1W | |
| R858 | ERX1SJ1R2P | RES M 1.2-J-1W | |
| R859 | ERDS2TJ272T | RES C 2.7K-J-1/4W | |
| R860 | ERG1SJ102P | RES M 1K-J-1W | |
| R861 | ERX12SJR27P | RES M .27-J-1/2W | |
| R862 | ERX12SJR27P | RES M .27-J-1/2W | |
| R863 | ERX12SJR27P | RES M .27-J-1/2W | |
| R864 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R865 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R866 | ERJ6GEYJ561V | RES M 560-J-1/10W | |
| R867 | ERJ6GEYJ122V | RES M 1.2K-J-1/10W | |
| R868 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R869 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R870 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R872 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R873 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R874 | ERDS1FJ390T | RES C 39-J-1/2W | |
| R875 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R876 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R878 | ERDS2TJ223T | RES C 22K-J-1/4W | |
| R879 | ERJ6ENF4021V | RES M 4.02K-F-1/10W | |
| R884 | ERX1SJ1R8P | RES M 1.8-J-1W | |
| R886 | ERDS2TJ272T | RES C 2.7K-J-1/4W | |
| R886 | ERJ6GEYJ272V | RES M 2.7K-J-1/10W | |
| R887 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R888 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R889 | ERJ6GEYJ272V | RES M 2.7K-J-1/10W | |
| R890 | ERDS2TJ152T | RES C 1.5K-J-1/4W | |
| R891 | ERG1SJ823P | RES M 82K-J-1W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R892 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R893 | ERDS1FJ332T | RES C 3.3K-F-1/2W | |
| R894 | ERJ6ENF1001V | RES M 1K-F-1/10W | |
| R896 | ERDS1TJ334T | RES C 330K-J-1/2W | |
| R898 | ERJ6GEYJ563V | RES M 56K-J-1/10W | |
| R899 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R900 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R901 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R902 | ERJ6GEYJ682V | RES M 6.8K-J-1/10W | |
| R903 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R904 | ERJ6GEYJ392V | RES M 3.9K-J-1/10W | |
| R906 | ERJ6GEYJ333V | RES M 33K-J-1/10W | |
| R907 | ERJ6GEYJ681V | RES M 680-J-1/10W | |
| R908 | ERJ6GEYJ151V | RES M 150-J-1/10W | |
| R912 | ERDS2TJ681T | RES C 680-J-1/4W | |
| R915 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R916 | ERDS2TJ221T | RES C 220-J-1/4W | |
| R917 | ERQ14AJ100P | RES F 10-J-1/4W | |
| R924 | ERDS2TJ561T | RES C 560-J-1/4W | |
| R925 | ERDS2TJ683T | RES C 68K-J-1/4W | |
| R926 | ERDS2TJ683T | RES C 68K-J-1/4W | |
| R927 | ERDS2TJ561T | RES C 560-J-1/4W | |
| R928 | ERQ12AJ151P | RES F 150-J-1/2W | |
| R929 | ERQ14AJ2R2P | RES F 2.2-J-1/4W | |
| R930 | ERDS2TJ820T | RES C 82-J-1/4W | |
| R931 | ERQ14AJ2R2P | RES F 2.2-J-1/4W | |
| R932 | ERQ14AJ3R3P | RES F 3.3-J-1/4W | |
| R933 | ERQ14AJ3R3P | RES F 3.3-J-1/4W | |
| R934 | ERQ1CJP331S | RES F 330-J-1W | |
| R935 | ERG2FJ391H | RES M 390-J-2W | |
| R937 | ERJ6GEYJ121V | RES M 120-J-1/10W | |
| R940 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R941 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R942 | ERG2FJ391H | RES M 390-J-2W | |
| R1051 | ERJ6ENF1002V | RES M 10K-F-1/10W | |
| R1052 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R1053 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R1054 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R1055 | ERJ6GEYJ512V | RES M 5.1K-J-1/10W | |
| R1056 | ERJ6GEYJ912V | RES M 9.1K-J-1/10W | |
| R1057 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R1058 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R1059 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R1060 | ERJ6GEYJ470V | RES M 47-J-1/10W | |
| R1061 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R1062 | ERJ6GEYJ182V | RES M 1.8K-J-1/10W | |
| R1063 | ERJ6GEYJ133V | RES M 13K-J-1/10 | |
| R1064 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R1401 | ERJ6ENF3902V | RES M 39K-F-1/10W | |
| R1402 | ERJ6ENF3012V | RES M 30.1K-F-1/16W | |
| R1403 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R1404 | ERJ6ENF8201V | RES M 8.2K-F-1/10W | |
| R1405 | ERJ6ENF9101V | RES M 9.1K-F-1/10W | |
| R1406 | ERJ6ENF1691V | RES M 1.69K-F-1/10W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R1407 | ERJ6ENF8450V | RES M 845-F-1/10W | |
| R1408 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R1409 | ERDS2TJ473T | RES C 47K-J-1/4W | |
| R1410 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R1411 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R1507 | ERJ6ENF4701V | RES M 4.7K-F-1/10W | |
| R1508 | ERJ6ENF1002V | RES M 10K-F-1/10W | |
| R1512 | ERJ6ENF1002V | RES M 10K-F-1/10W | |
| R1514 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R1515 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R1518 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R1522 | ERJ6GEYJ330V | RES M 33-J-1/10W | |
| R1523 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R1526 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R1527 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R1529 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R1530 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R1531 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R1534 | ERJ6ENF2201V | RES M 2.2K-F-1/10W | |
| R1536 | ERJ6ENF1692V | RES M 16.9K-F-1/10W | |
| R1537 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R1569 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R1583 | ERJ6ENF5761V | RES M 5.76K-F-1/10W | |
| R1585 | ERJ6ENF3651V | RES M 3.65K-F-1/16W | |
| R1587 | ERJ6ENF2202V | RES M 22K-F-1/10W | |
| R1588 | ERJ6GEYJ152V | RES M 1.5K-J-1/10W | |
| R1591 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R1592 | ERJ6GEYJ152V | RES M 1.5K-J-1/10W | |
| R1593 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R1599 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R2203 | ERJ6GEYJ222V | RES M 2.2K-J-1/10W | |
| R2206 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2207 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2221 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2301 | ERJ6ENF1100V | RES M 110-F-1/10W | |
| R2302 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W CT-30WX54J /UJ | |
| R2302 | ERJ6ENF5232V | RES M 5.32K-F-1/10W | |
| R2303 | ERJ6ENF1100V | RES M 110-F-1/10W | |
| R2304 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W CT-30WX54J /UJ | |
| R2304 | ERJ6ENF4701V | RES M 4.7K-F-1/10W | |
| R2307 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |
| R2308 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R2309 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2309 | ERJ6GEYJ223V | RES M 22K-J-1/10W CT-30WX54J /UJ | |
| R2310 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2312 | ERJ6ENF1303V | RES M 130K-F-1/10W | |
| R2313 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R2314 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |
| R2315 | ERJ6GEYJ683V | RES M 68K-J-1/10W | |
| R2316 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2317 | ERJ6ENF4701V | RES M 4.7K-F-1/10W | |
| R2318 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2319 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |
| R2320 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |

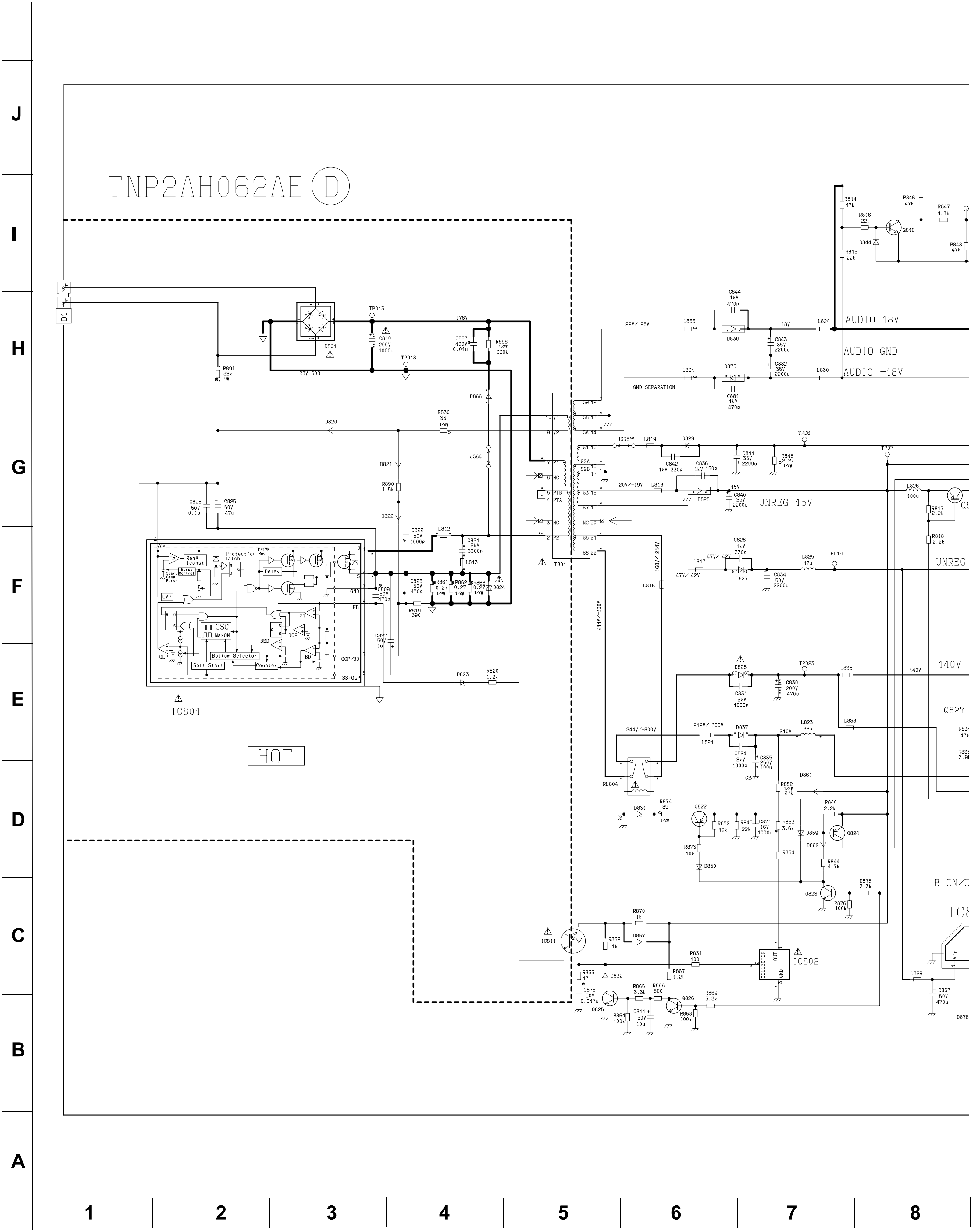
| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R2322 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2324 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2325 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2326 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2328 | ERJ6GEYJ223V | RES M 22K-J-1/10W | |
| R2329 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2331 | ERJ6ENF5232V | RES M 5.32K-F-1/10W | |
| R2332 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2332 | ERJ6GEYJ392V | RES M 3.9K-J-1/10W CT-30WX54J /UJ | |
| R2333 | ERJ6GEYJ183V | RES M 18K-J-1/10W CT-30WX54J /UJ | |
| R2334 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2335 | ERJ6GEYJ271V | RES M 270-J-1/10W CT-30WX54J /UJ | |
| R2336 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R2337 | ERJ6GEYJ271V | RES M 270-J-1/10W | |
| R2340 | ERJ6GEYJ104V | RES M 100K-J-1/10W CT-30WX54J /UJ | |
| R2342 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2344 | ERJ6GEYJ104V | RES M 100K-J-1/10W CT-30WX54J /UJ | |
| R2345 | ERJ6GEYJ683V | RES M 68K-J-1/10W | |
| R2347 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R2351 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2352 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2353 | ERJ6GEYJ183V | RES M 18K-J-1/10W | |
| R2354 | ERJ6GEYJ432V | RES M 4.3K-J-1/10W | |
| R2355 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2356 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2357 | ERJ6GEYJ332V | RES M 3.3K-J-1/10W | |
| R2358 | ERJ6GEYJ183V | RES M 18K-J-1/10W | |
| R2359 | ERJ6GEYJ432V | RES M 4.3K-J-1/10W | |
| R2360 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2361 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2362 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R2363 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R2365 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2366 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2367 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R2368 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R2372 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2373 | ERJ6GEYJ333V | RES M 33K-J-1/10W | |
| R2374 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2375 | ERJ6GEYJ682V | RES M 6.8K-J-1/10W | |
| R2379 | ERJ6GEYJ473V | RES M 47K-J-1/10W | |
| R2384 | ERJ6GEYJ472V | RES M 4.7K-J-1/10W | |
| R2385 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2396 | ERDS2TJ102T | RES C 1K-J-1/4W CT-30WX54J/UJ | |
| R2404 | ERJ6GEYJ152V | RES M 1.5K-J-1/10W CT-30WX54J /UJ | |
| R2422 | ERJ6GEYJ683V | RES M 68K-J-1/10W CT-30WX54J /UJ | |
| R2451 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2452 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R2453 | ERJ6GEYJ681V | RES M 680-J-1/10W | |
| R2454 | ERJ6GEYJ471V | RES M 470-J-1/10W | |
| R2456 | ERJ6GEYJ681V | RES M 680-J-1/10W | |
| R2457 | ERJ6GEYJ471V | RES M 470-J-1/10W | |
| R2851 | ERX2SJS1R3H | RES M 1.3-J-2W | |
| R2852 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R2853 | ERJ6ENF1911V | RES M 1.91K-F-1/10W | |
| R2854 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R2856 | ERJ6ENF1651V | RES M 1.65K-F-1/10W | |
| R2856 | ERJ6ENF1691V | RES M 1.69K-F-1/10W CT-30WX54J/UJ | |
| R2857 | ERJ6ENF1021V | RES M 1.02K-F-1/10W | |
| R2858 | ERJ6ENF1541V | RES M 1.54K-F-1/10W | |
| R2859 | ERJ6ENF1471V | RES M 1.47K-F-1/10W | |
| R2860 | ERJ6ENF4300V | RES M 430-F-1/10W | |
| R2861 | ERJ6ENF1001V | RES M 1K-F-1/10W | |
| R2862 | ERJ6ENF3001V | RES M 3K-F-1/10W | |
| R2863 | ERJ6ENF1001V | RES M 1K-F-1/10W CT-30WX54J /UJ | |
| R2863 | ERJ6ENF9760V | RES M 976-F-1/10W | |
| R2883 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R2892 | ERJ6ENF1002V | RES M 10K-F-1/10W CT-30WX54J /UJ | |
| R3301 | ERJ6GEYJ184V | RES M 180K-J-1/10W CT-30WX54J /UJ | |
| R3302 | ERJ6GEYJ184V | RES M 180K-J-1/10W CT-30WX54J /UJ | |
| R3303 | ERJ6ENF75R0V | RES M 75.0-F-1/10W CT-30WX54J /UJ | |
| R3304 | ERJ6ENF75R0V | RES M 75.0-F-1/10W CT-30WX54J /UJ | |
| R3305 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3306 | ERJ6ENF75R0V | RES M 75.0-F-1/10W CT-30WX54J /UJ | |
| R3307 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3308 | ERJ6ENF75R0V | RES M 75.0-F-1/10W | |
| R3309 | ERJ6ENF75R0V | RES M 75.0-F-1/10W | |
| R3310 | ERJ6ENF75R0V | RES M 75.0-F-1/10W | |
| R3311 | ERJ6ENF75R0V | RES M 75.0-F-1/10W | |
| R3312 | ERJ6ENF75R0V | RES M 75.0-F-1/10W | |
| R3313 | ERJ6ENF75R0V | RES M 75.0-F-1/10W | |
| R3314 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R3315 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3316 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3317 | ERJ6ENF75R0V | RES M 75.0-F-1/10W CT-30WX54J /UJ | |
| R3318 | ERJ6ENF75R0V | RES M 75.0-F-1/10W | |
| R3319 | ERJ6ENF75R0V | RES M 75.0-F-1/10W CT-30WX54J /UJ | |
| R3320 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R3321 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3322 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3323 | ERJ6ENF75R0V | RES M 75.0-F-1/10W CT-30WX54J /UJ | |
| R3324 | ERJ6GEYJ184V | RES M 180K-J-1/10W CT-30WX54J /UJ | |
| R3326 | ERJ6GEYJ184V | RES M 180K-J-1/10W CT-30WX54J /UJ | |
| R3327 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3328 | ERJ6GEYJ184V | RES M 180K-J-1/10W | |
| R3403 | ERJ6GEYJ224V | RES M 220K-J-1/10W | |
| R3404 | ERJ6GEYJ224V | RES M 220K-J-1/10W | |
| R3801 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R3802 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R3803 | ERJ6GEYJ560V | RES M 56-J-1/10W | |
| R3804 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R3805 | ERDS2TJ471T | RES C 470-J-1/4W | |
| R3806 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3807 | EROS2THF3013 | RES M 301K-F-1/4W | |
| R3808 | ERJ6ENF1402V | RES M 14K-F-1/10W | |
| R3809 | ERJ6GEYJ330V | RES M 33-J-1/10W | |
| R3810 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3811 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R3812 | ERJ6GEYJ330V | RES M 33-J-1/10W | |
| R3813 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3814 | EROS2THF3013 | RES M 301K-F-1/4W | |
| R3815 | ERJ6ENF1402V | RES M 14K-F-1/10W | |
| R3816 | ERJ6GEYJ330V | RES M 33-J-1/10W | |
| R3817 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3818 | ERDS2TJ224T | RES C 220K-J-1/4W | |
| R3819 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3820 | ERDS2TJ224T | RES C 220K-J-1/4W | |
| R3821 | ERDS2TJ104T | RES C 100K-J-1/4W | |
| R3822 | EROS2THF3013 | RES M 301K-F-1/4W | |
| R3823 | ERDS2TJ224T | RES C 220K-J-1/4W | |
| R3824 | ERC12GK101V | RES C 100-K-1/2W | |
| R3825 | ERC12GK101V | RES C 100-K-1/2W | |
| R3826 | ERC12GK101V | RES C 100-K-1/2W | |
| R3827 | ERJ6ENF1402V | RES M 14K-F-1/10W | |
| R3828 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R3829 | ERJ6GEYJ102V | RES M 1K-J-1/10W | |
| R3830 | ERG1SJ682P | RES M 6.8K-J-1W | |
| R3831 | ERG2FJ333H | RES M 33K-J-2W | |
| R3832 | ERDS2TJ151T | RES C 150-J-1/4W | |
| R3833 | ERDS2TJ151T | RES C 150-J-1/4W | |
| R3834 | ERDS2TJ151T | RES C 150-J-1/4W | |
| R3836 | ERG2FJ101H | RES M 100-J-2W | |
| R3843 | ERDS2TJ224T | RES C 220K-J-1/4W | |
| R3844 | EROS2THF8871 | RES M 8.87K-F-1/4W | |
| R3845 | ERJ6ENF33R0V | RES M 33.0K-F-1/10W | |
| R3846 | ERJ6ENF33R0V | RES M 33.0K-F-1/10W | |
| R3847 | ERJ6ENF33R0V | RES M 33.0K-F-1/10W | |
| R3848 | ERJ6ENF2200V | RES M 220-F-1/10W | |
| R3849 | ERJ6ENF2200V | RES M 220-F-1/10W | |
| R3850 | ERJ6ENF2200V | RES M 220-F-1/10W | |
| R3851 | ERJ6GEYJ391V | RES M 390-J-1/10W | |
| R3852 | ERJ6GEYJ391V | RES M 390-J-1/10W | |
| R3853 | ERJ6GEYJ391V | RES M 390-J-1/10W | |
| R3857 | ERG2FJ393H | RES M 39K-J-2W | |
| R5501 | ERJ6GEYJ153V | RES M 15K-J-1/10W | |
| R5502 | ERJ6GEYJ153V | RES M 15K-J-1/10W | |
| R5504 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R5505 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R5507 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R5508 | ERJ6GEYJ101V | RES M 100-J-1/10W | |
| R5511 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| R5801 | ERJ6GEYJ153V | RES M 15K-J-1/10W | |
| R5802 | ERJ6GEYJ104V | RES M 100K-J-1/10W | |
| R5804 | ERG1SJ470P | RES M 47-J-1W | |
| R5805 | ERDS1FJ1R0T | RES C 1.0-J-1/2W | |
| R5806 | ERJ6ENF5602V | RES M 56K-F-1/10W | |
| R5807 | ERJ6ENF2001V | RES M 2K-F-1/10W | |
| R5808 | ERDS1FJ391T | RES C 390-J-1/2W | |
| R5809 | ERX12SJR68P | RES M .68-J-1/2W | |
| R5810 | ERX12SJR47P | RES M .47-J-1/2W | |
| R5811 | ERDS2TJ102T | RES C 1K-J-1/4W | |
| R5812 | ERDS2TJ822T | RES C 8.2K-J-1/4W | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R5813 | ERDS1FJ391T | RES C 390-J-1/2W | |
| R5815 | ERJ6GEYJ103V | RES M 10K-J-1/10W | |
| | | SWITCHES | |
| S803 | N9ZZ00000132 | SPARK GAP | ⚠ |
| S804 | N9ZZ00000132 | SPARK GAP | ⚠ |
| SW001 | EVQPBD05R | SWITCH | |
| SW002 | EVQPBD05R | SWITCH | |
| SW003 | EVQPBD05R | SWITCH | |
| SW004 | EVQPBD05R | SWITCH | |
| SW005 | EVQPBD05R | SWITCH | |
| SW006 | EVQPBD05R | SWITCH | |
| SW007 | EVQPBD05R | SWITCH | |
| SW008 | EVQPBD05R | SWITCH | |
| | | TRANSFORMERS | |
| T501 | ETH19K207AZ | TRANSFORMER | |
| T550 | G4E1A0000011 | TRANSFORMER | |
| T551 | ZTFN95004A | TRANSFORMER FLYBACK | ⚠ |
| T553 | ETS28AU2K9AD | TRANSFORMER | |
| T561 | ETF18L101A | TRANSFORMER | |
| T801 | ETS42AU185AD | TRANSFORMER | ⚠ |
| T802 | ETP28KBZA1ZG | TRANSFORMER | ⚠ |
| | | OTHERS | |
| TU001 | ENGF6302GF | MAIN TUNER | ⚠ |
| TU002 | ENG36A08GF | SUB TUNER | ⚠ |
| M001 | W76MAG185X | CRT 30” | ⚠ |
| JK3804A | K3B10CA00041 | CRT SOCKET | |
| M002 | KDY4YHG67F | DEFLECTION YOKE | ⚠ |
| M003 | TLCA006 | CONVERGENCE YOKE | |
| M004 | TXF3A01HE4 | GROUND CABLE | |
| M005 | TSP2AA035 | COIL DEGAUSSING | ⚠ |
| M006 | TSP2AF007 | COIL ROTATION | |
| M007 | EASG12S503A2 | WOOFER SPEAKER | |
| M008 | EASG7DH08E2 | TWEETER | |
| M009 | TKP2AA1311S | SPEAKER BOX BASE | |
| M010 | TXFKP10JSER | SPEAKER BOX COVER | |
| M011 | TBX2AA0241 | DISC BUTTON | |
| M012 | TBX2AA0251A | 4-KEY BUTTON | |
| M013 | TKX2AA0201 | LED GUIDE | |
| M014 | TKX2AA0211 | IR GUIDE | |
| M015 | TEK6935 | DOOR CATCH | |
| M017 | TKP2AA1292S | DOOR PANEL CT-30WX54J/UJ | |
| M018 | TKP2AA1293S | FRONT DOOR CT-30WC14J/UJ | |
| M019 | TSM2AA001 | MAGNET PERMALLOY | |
| M020 | TSN63115-4 | MAGNET PURITY | |
| M021 | TSX2AA0411 | LINE CORD | ⚠ |
| M022 | TXFKP09JSER | A/V BRACKET CT-30WC14J/UJ | |
| M023 | TXFKP11JSER | A/V BRACKET CT-30WX54J/UJ | |
| M024 | TXFKU01HE4S | BACK CABINET | |
| M025 | TXFKY01HE4S | FRONT CABINET CT-30WX54J/UJ | |
| M026 | TXFKY01HQ4S | FRONT CABINET CT-30WC14J/UJ | |
| RM001 | PNA4701M05TV | REMOTE CONTROL RECEPTOR | |
| JK3301 | TJB2AA0521 | TERMINAL A/V CT-30WX54J/UJ | |

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| JK3401 | TJB2AA0511 | TERMINAL A/V | |
| JK3301A | TJB2AA0522 | TERMINAL A/V CT-30WC14J/UJ | |
| JK3302A | TJB2AA0532 | TERMINAL A/V CT-30WX54J/UJ | |
| JK3302B | TJB2AA0533 | TERMINAL A/V CT-30WC14J/UJ | |
| | | ACCESORIES | |
| M027 | TQB2AA0496-1 | OWNERS MANUAL | |
| M028 | EUR7603ZF0 | TRANSMITTER REMOTE CONTROL | |
| M029 | UR76EC0303E | REMOTE CONTROL BATTERY COVER | |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HOT
IC801
RBV-608
AUDIO 18V
AUDIO GND
AUDIO -18V
GND SEPARATION
UNREG 15V
UNREG
140V
+B ON/O
T801
IC802
IC811
RL804
Q816
Q822
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Q825
Q826
Q827
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D867
D875
C809
C810 200V 1000u
C821 2kV 3300p
C822 50V 1000p
C823 50V 470p
C825 50V 47u
C826 50V 0.1u
C827 50V 1u
C830 200V 470u
C834 50V 2200u
C835 250V 100u
C840 25V 2200u
C841 35V 2200u
C843 35V 2200u
C844 1kV 470p
C867 400V 0.01u
C881 1kV 470p
C882 35V 2200u
R830 33
R890 1.5k
R891 82k 1W
R896 330k
R819 390
R820 1.2k
R861 0.27
R862 0.27
R863 0.27
TPD13
TPD18
TPD6
TPD7
TPD19
TPD23
JS35
JS64
22V/-25V
18V
178V
20V/-19V
15V
47V/-42V
168V/-214V
244V/-300V
212V/-300V
210V
Protection latch
Reg&Iconst
Burst Control
Start Stop Burst
Delay
OVP
OLP
OSC
MaxON
FB
OCP
BSD
BD
Bottom Selector
Soft Start
Counter
OCP/BD
SS/OLP
COLLECTOR
OUT
GND
J
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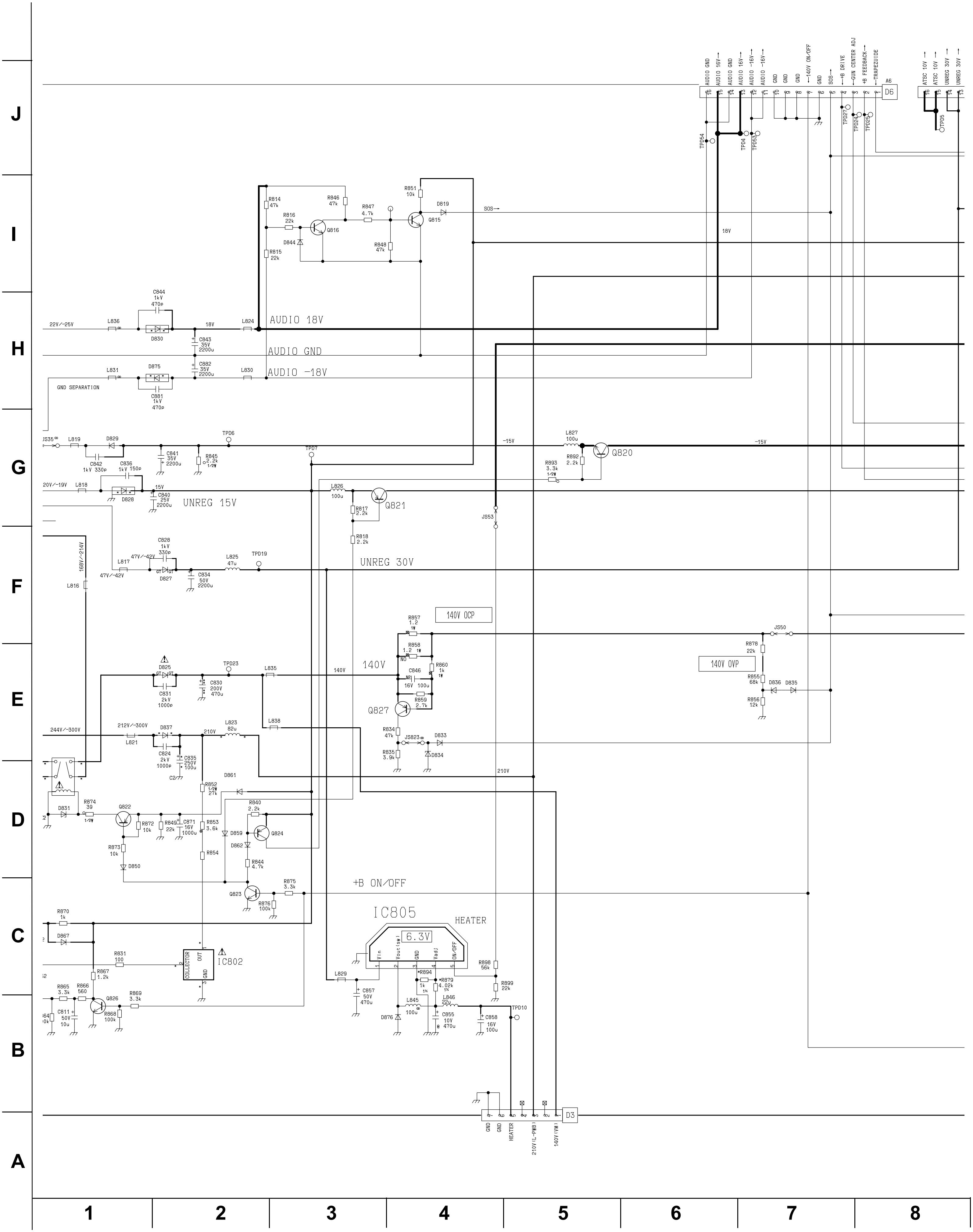
J
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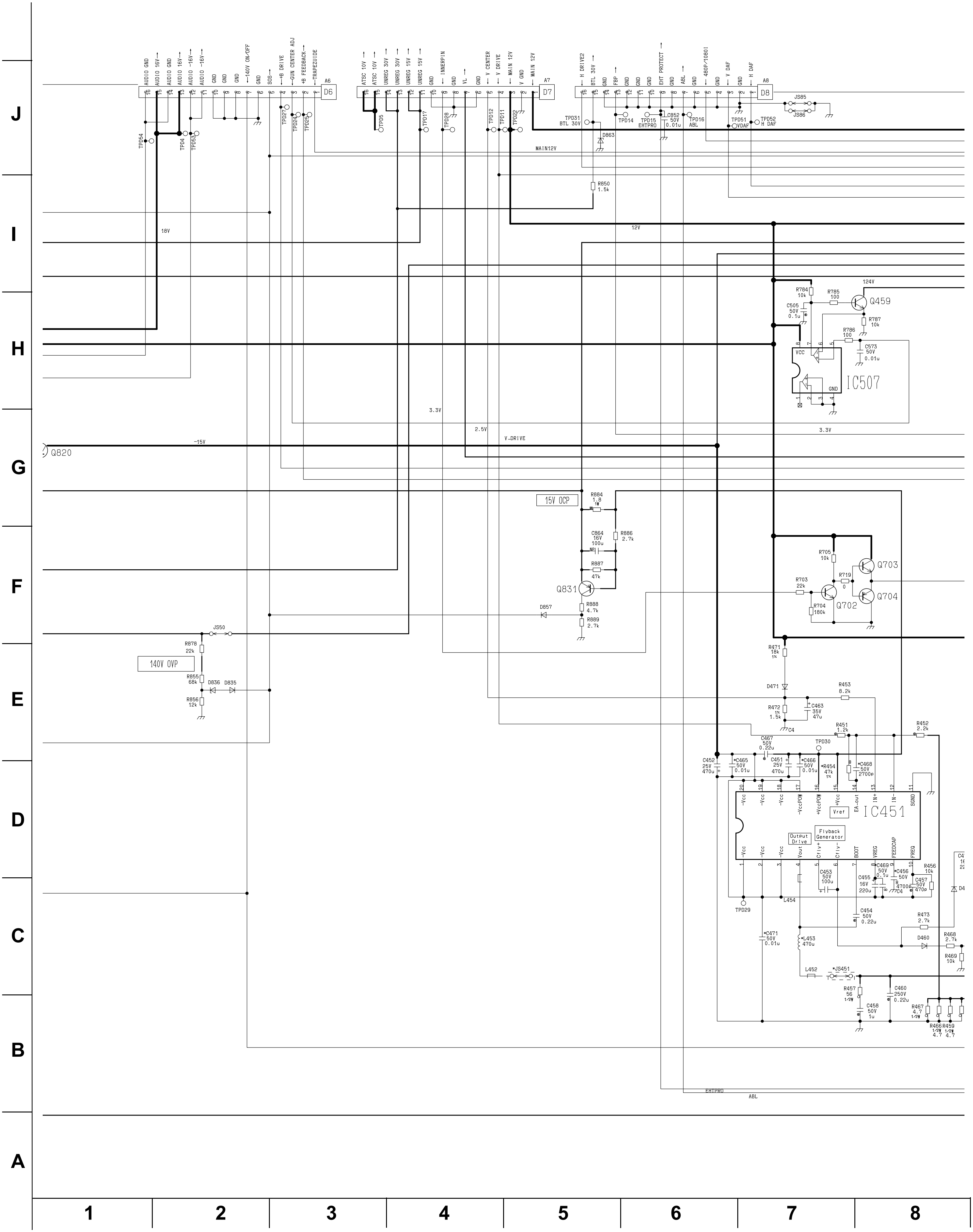
8
AUDIO GND
AUDIO 16V
AUDIO GND
AUDIO 16V
AUDIO -16V
AUDIO -16V
GND
GND
GND
←140V ON/OFF
GND
SOS→
←+B DRIVE
←GUN CENTER ADJ
+B FEEDBACK→
←TRAPEZOIDE
A6
D6
ATSC 10V →
ATSC 10V →
UNREG 30V →
UNREG 30V →
TPD54
TPD4
TPD53
TPD27
TPD24
TPD25
TPD5
R814 47k
R816 22k
R815 22k
D844
R846 47k
Q816
R847 4.7k
R848 47k
R851 10k
Q815
D819
SOS→
18V
C844 1kV 470p
22V/-25V
L836
D830
18V
C843 35V 2200u
L824
AUDIO 18V
AUDIO GND
AUDIO -18V
L831
D875
C882 35V 2200u
L830
C881 1kV 470p
GND SEPARATION
JS35
L819
D829
TPD6
C842 1kV 330p
C836 1kV 150p
C841 35V 2200u
R845 2.2k 1/2W
TPD7
-15V
L827 100u
Q820
-15V
R893 3.3k 1/2W
R892 2.2k
20V/-19V
L818
D828
15V
C840 25V 2200u
UNREG 15V
L826 100u
Q821
R817 2.2k
R818 2.2k
JS53
168V/-214V
L816
C828 1kV 330p
47V/-42V
L817
47V/-42V
D827
C834 50V 2200u
L825 47u
TPD19
UNREG 30V
140V OCP
R857 1.2 1W
R858 1.2 1W
R860 1k 1W
C846 16V 100u
R859 2.7k
Q827
140V
JS50
R878 22k
140V OVP
R855 68k
D836
D835
R856 12k
D825
C831 2kV 1000p
TPD23
C830 200V 470u
L835
140V
244V/-300V
212V/-300V
L821
D837
C824 2kV 1000p
C835 250V 100u
210V
L823 82u
L838
R834 47k
JS823
D833
R835 3.9k
D834
C2
210V
D861
D831
R874 39 1/2W
Q822
R872 10k
R849 22k
C871 16V 1000u
R852 1/2W 27k
R853 3.6k
R840 2.2k
Q824
D859
D862
R844 4.7k
R873 10k
D850
R854
Q823
R875 3.3k
R876 100k
+B ON/OFF
IC805
HEATER
6.3V
Vin
Vout(sw)
GND
Vadj
ON/OFF
R870 1k
D867
R831 100
COLLECTOR
OUT
GND
IC802
R867 1.2k
R865 3.3k
R866 560
Q826
R869 3.3k
C811 50V 10u
R868 100k
L829
C857 50V 470u
R894 1k 1%
R879 4.02k 1%
L845 100u
L846 22u
D876
C855 10V 470u
C858 16V 100u
R898 56k
R899 22k
TPD10
D3
GND
GND
HEATER
210V(L-PWB)
140V(VM)

D-BOARD 2/5 TNP2AH062AE CT-30WX54J/UJ, CT-30WC14J/UJ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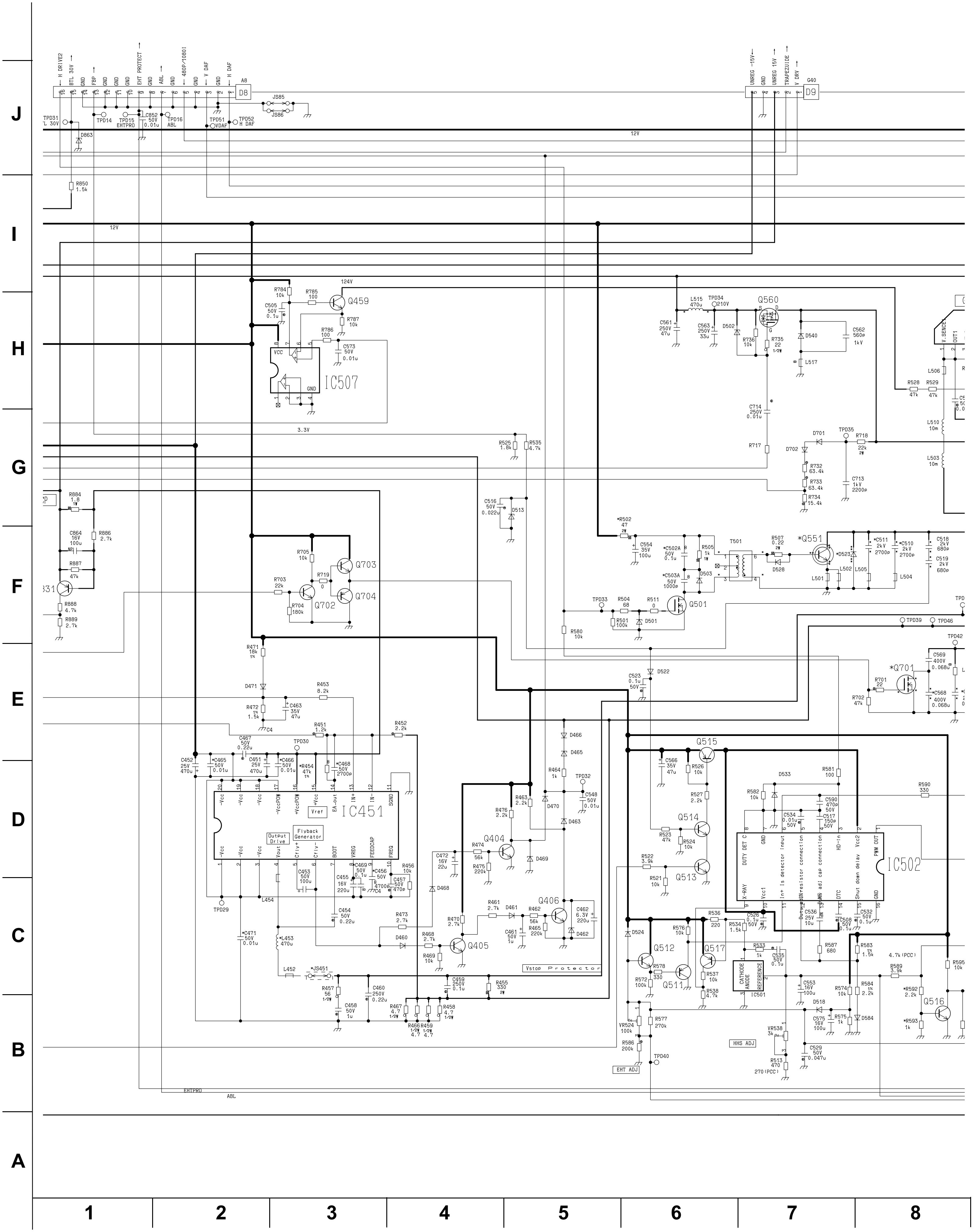
A6
D6
AUDIO GND
AUDIO 16V
AUDIO GND
AUDIO 16V
AUDIO -16V
AUDIO -16V
GND
GND
GND
140V ON/OFF
GND
SOS
+B DRIVE
GUN CENTER ADJ
+B FEEDBACK
TRAPEZOIDE
A7
D7
ATSC 10V
ATSC 10V
UNREG 30V
UNREG 30V
UNREG 15V
UNREG 15V
GND
INNERPIN
GND
VL
GND
V CENTER
V DRIVE
MAIN 12V
V GND
MAIN 12V
A8
D8
H DRIVE2
BTL 30V
GND
FBP
GND
GND
GND
EHT PROTECT
GND
ABL
GND
480P/1080I
GND
V DAF
GND
H DAF
JS85
JS86
TPD54
TPD4
TPD53
TPD27
TPD24
TPD25
TPD5
TPD17
TPD28
TPD12
TPD11
TPD22
TPD31
BTL 30V
D863
TPD14
TPD15
EHTPRO
C852
50V
0.01u
TPD16
ABL
TPD51
VDAF
TPD52
H DAF
MAIN12V
R850
1.5k
18V
12V
124V
R784
10k
R785
100
Q459
C505
50V
0.1u
R787
10k
R786
100
C573
50V
0.01u
VCC
GND
IC507
3.3V
2.5V
V-DRIVE
3.3V
-15V
Q820
15V OCP
R884
1.8
1W
C864
16V
100u
NP
R886
2.7k
R887
47k
Q831
D857
R888
4.7k
R889
2.7k
R705
10k
Q703
R719
0
R703
22k
Q702
Q704
R704
180k
JS50
R878
22k
140V OVP
R855
68k
D836
D835
R856
12k
R471
18k
1%
D471
R453
8.2k
R472
1%
1.5k
C463
35V
47u
C4
R451
1.2k
R452
2.2k
C467
50V
0.22u
TPD30
C452
25V
470u
*C465
50V
0.01u
C451
25V
470u
*C466
50V
0.01u
*R454
47k
1%
*C468
50V
2700p
-Vcc
-Vcc
-Vcc
-VccPOW
+VccPOW
+Vcc
EA-out
IN+
IN-
SGND
Vref
IC451
Output Drive
Flyback Generator
-Vcc
-Vcc
-Vcc
Vout
Cfly+
Cfly-
BOOT
VREG
FEEDCAP
FREQ
C453
50V
100u
C469
50V
0.1u
*C456
50V
4700p
C455
16V
220u
C457
50V
470p
R456
10k
TPD29
L454
C454
50V
0.22u
R473
2.7k
*C471
50V
0.01u
*L453
470u
D460
R468
2.7k
R469
10k
L452
*JS451
R457
56
1/2W
C460
250V
0.22u
C458
50V
1u
R467
4.7
1/2W
R466
1/2W
4.7
R459
1/2W
4.7
EHTPRO
ABL



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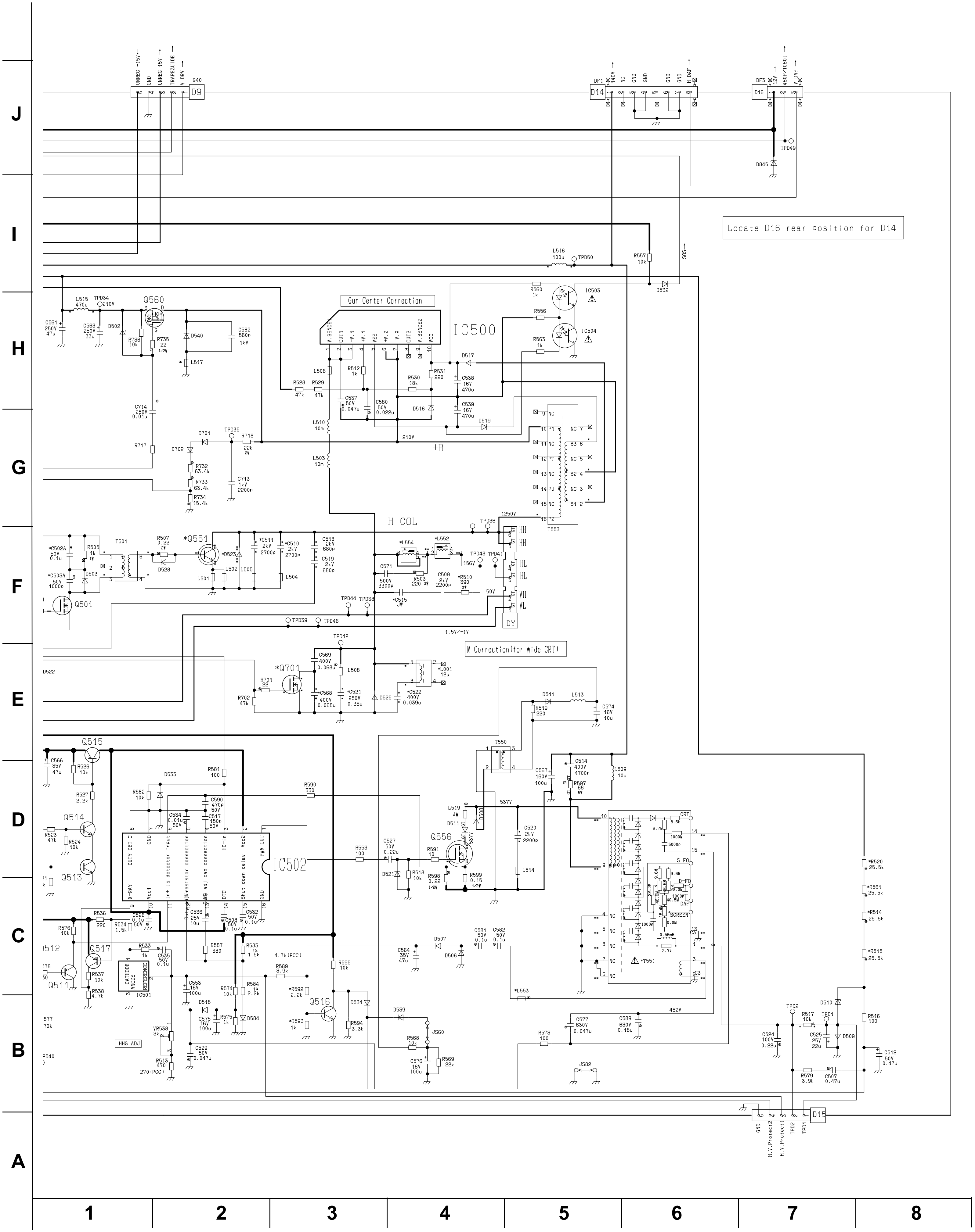
H DRIVE2
BTL 30V
GND
FBP
EHT PROTECT
ABL
480P/1080I
V DAF
H DAF
A8
D8
JS85
JS86
TPD31
TPD14
TPD15 EHTPRO
C852 50V 0.01u
TPD16 ABL
TPD51 VDAF
TPD52 H DAF
D863
12V
UNREG -15V
UNREG 15V
TRAPEZOIDE
V DRV
G40
D9
R850 1.5k
R784 10k
R785 100
124V
Q459
C505 50V 0.1u
R787 10k
R786 100
C573 50V 0.01u
VCC
GND
IC507
3.3V
L515 470u
TPD34 210V
Q560
C561 250V 47u
C563 250V 33u
D502
R736 10k
R735 22 1/2W
D540
C562 560p 1kV
L517
V.SENCE
OUT1
L506
R528 47k
R529 47k
C714 250V 0.01u
L510 10m
D701
TPD35
R718 22k 2W
D702
R717
R732 63.4k
R733 63.4k
R734 15.4k
C713 1kV 2200p
L503 10m
R525 1.8k
R535 4.7k
C516 50V 0.022u
D513
R884 1.8 1W
C864 16V 100u NP
R886 2.7k
R887 47k
Q831
R888 4.7k
R889 2.7k
R705 10k
Q703
R719 0
Q704
R703 22k
Q702
R704 180k
*R502 47 2W
C554 35V 100u
*C502A 50V 0.1u
R505 1k 1W
T501
R507 0.22 2W
*Q551
*D523
*C511 2kV 2700p
*C510 2kV 2700p
C518 2kV 680p
C519 2kV 680p
D528
L501
L502
L505
L504
*C503A 50V 1000p
D503
TPD33
R504 68
R511 0
Q501
R501 100k
D501
R580 10k
TPD39
TPD46
TPD42
C569 400V 0.068u
*Q701
R701 22
R702 47k
*C568 400V 0.068u
R471 18k 1%
D471
R453 8.2k
R472 1.5k 1%
C463 35V 47u
C4
C523 0.1u 50V
D522
R451 1.2k
R452 2.2k
C467 50V 0.22u
TPD30
C452 25V 470u
*C465 50V 0.01u
C451 25V 470u
*C466 50V 0.01u
*R454 47k 1%
*C468 50V 2700p
D466
D465
R464 1k
TPD32
C548 50V 0.01u
D470
D463
R463 2.2k
R476 2.2k
-Vcc
-VccPOW
+VccPOW
+Vcc
Vref
EA-out
IN+
IN-
SGND
IC451
Output Drive
Flyback Generator
Vout
Cfly+
Cfly-
BOOT
VREG
FEEDCAP
FREQ
C453 50V 100u
C455 16V 220u
C469 50V 0.1u
C456 50V 4700p
C457 50V 470p
R456 10k
TPD29
L454
C454 50V 0.22u
*C471 50V 0.01u
*L453 470u
L452
*JS451
R457 56 1/2W
C458 50V 1u
C460 250V 0.22u
C472 16V 22u
D468
R474 56k
R475 220k
Q404
D469
R473 2.7k
D460
R468 2.7k
R469 10k
Q405
R470 2.7k
R461 2.7k
D461
R462 56k
R465 220k
C461 50V 1u
Q406
C462 6.3V 220u
D462
Vstop Protector
C459 250V 0.1u
R455 330 2W
R467 4.7 1/2W
R466 1/2W 4.7
R459 1/2W 4.7
R458 4.7 1/2W
Q515
C566 35V 47u
R526 10k
R527 2.2k
Q514
R523 47k
R524 10k
R522 3.9k
R521 10k
Q513
D533
R581 100
R590 330
R582 10k
C590 470p 50V
C534 0.01u 50V
C517 150p 50V
DUTY DET C
Vcc2
PWM OUT
HD-in
In+ Is detector input
resistor connection
adj cap connection
Shut down delay
X-RAY
Vcc1
DTC
IC502
R536 220
C526 0.1u 50V
R534 1.5k
C536 25V 10u
C508 50V 0.1u
C532 50V 0.1u
D524
Q512
R576 10k
Q517
R578 330
R533 1k
C535 50V 0.1u
R587 680
R583 1% 1.5k
4.7k(PCC)
R595 10k
R572 100k
Q511
R537 10k
R538 4.7k
CATHODE ANODE
REFERENCE
IC501
C553 16V 100u
R589 3.9k
*R592 2.2k
R574 10k
R584 1% 2.2k
Q516
D518
C575 16V 100u
R575 1k
D584
*R593 1k
VR524 100k
R577 270k
VR538 3k
C529 50V 0.047u
R586 200k
HHS ADJ
R513 470
270(PCC)
TPD40
EHT ADJ
EHTPRO
ABL



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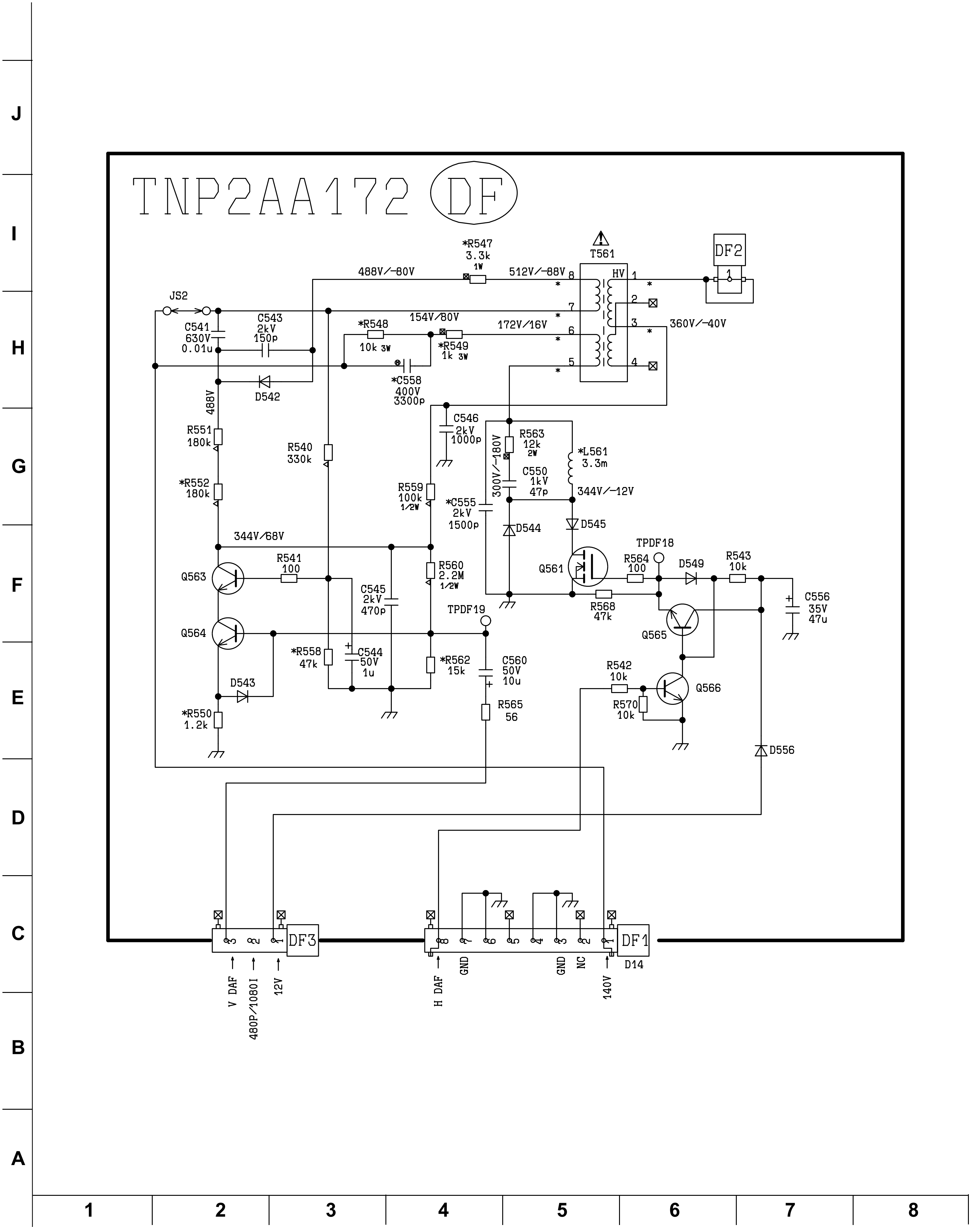
G40
D9
UNREG -15V
GND
UNREG 15V
TRAPEZUIDE
V DRV
DF1
D14
140V
NC
GND
H DAF
DF3
D16
12V
480P/1080I
V DAF
TPD49
D845
Locate D16 rear position for D14
L516 100u
TPD50
R557 10k
SOS
D532
IC503
IC504
R560 1k
R556
R563 1k
L515 470u
TPD34 210V
Q560
C561 250V 47u
C563 250V 33u
D502
R736 10k
R735 22 1/2W
D540
C562 560p 1kV
L517
Gun Center Correction
IC500
V.SENCE1
OUT1
-V.1
+V.1
VEE
+V.2
-V.2
OUT2
V.SENCE2
VCC
L506
R512 1k
R528 47k
R529 47k
R530 18k
R531 220
C537 50V 0.047u
C580 50V 0.022u
D516
D517
C538 16V 470u
C539 16V 470u
D519
C714 250V 0.01u
R717
L510 10m
L503 10m
D701
D702
TPD35
R718 22k 2W
R732 63.4k
R733 63.4k
R734 15.4k
C713 1kV 2200p
210V
+B
T553
1250V
H COL
TPD36
HH
HL
VH
VL
DY
T501
R505 1k 1W
*C502A 50V 0.1u
*C503A 50V 1000p
D503
Q501
R507 0.22 2W
D528
*Q551
*D523
L501
L502
L505
*C511 2kV 2700p
*C510 2kV 2700p
L504
C518 2kV 680p
C519 2kV 680p
*L554
*L552
C571 500V 3300p
R503 220 3W
C509 2kV 2200p
*R510 390 3W
TPD48
TPD41
156V
50V
TPD44
TPD38
*C515 JW
TPD39
TPD46
1.5V/-1V
M Correction(for wide CRT)
TPD42
*Q701
R701 22
R702 47k
C569 400V 0.068u
*C568 400V 0.068u
L508
*C521 250V 0.36u
D525
*C522 400V 0.039u
*L001 12u
D522
D541
L513
R519 220
C574 16V 10u
T550
C567 160V 100u
C514 400V 4700p
L509 10u
R597 68 5W
537V
Q515
C566 35V 47u
R526 10k
R527 2.2k
Q514
R523 47k
R524 10k
Q513
R581 100
D533
R582 10k
C534 0.01u 50V
C590 470p 50V
C517 150p 50V
R590 330
IC502
DUTY DET C
GND
In+ is detector input
resistor connection
adj cap connection
HD-in
Vcc2
PWM OUT
X-RAY
Vcc1
Duty
DTC
Shut down delay
L519 JW
D511
D508
Q556
R553 100
C527 50V 0.22u
R591 10
D521
R518 10k
R598 0.22 1/2W
R599 0.15 1/2W
C520 2kV 2200p
L514
CRT
S-FO
D-FO
DAF
SCREEN
*T551
R536 220
R534 1.5k
C526 0.1u 50V
C536 25V 10u
C508 50V 0.1u
C532 50V 0.1u
R587 680
R576 10k
Q517
Q512
Q511
R533 1k
C535 50V 0.1u
R537 10k
R538 4.7k
IC501
CATHODE
ANODE
REFERENCE
R583 1% 1.5k
4.7k(PCC)
R589 3.9k
R595 10k
C553 16V 100u
R574 10k
R584 1% 2.2k
*R592 2.2k
Q516
*R593 1k
D534
R594 3.3k
C564 35V 47u
D507
D506
C581 50V 0.1u
C582 50V 0.1u
*L553
D518
C575 16V 100u
R575 1k
D584
D539
R568 10k
JS60
C576 16V 100u
R569 22k
452V
C577 630V 0.047u
C589 630V 0.18u
R573 100
JS82
VR538 3k
HHS ADJ
R513 470
270(PCC)
C529 50V 0.047u
TPD40
*R520 25.5k
*R561 25.5k
*R514 25.5k
*R515 25.5k
R516 100
D510
TPD2
R517 10k
TPD1
D509
C524 100V 0.22u
C525 25V 22u
C512 50V 0.47u
R579 3.9k
C507 0.47u
NP
D15
GND
H.V.Protect2
H.V.Protect1
TPD2
TPD1


TNP2AA172 DF
T561
DF2
1
HV
*R547
3.3k
1W
488V/-80V
512V/-88V
8
7
6
5
1
2
3
4
360V/-40V
JS2
C543
2kV
150p
C541
630V
0.01u
*R548
10k 3W
154V/80V
*R549
1k 3W
172V/16V
*C558
400V
3300p
D542
488V
C546
2kV
1000p
R551
180k
R540
330k
R563
12k
2W
300V/-180V
*L561
3.3m
C550
1kV
47p
344V/-12V
*R552
180k
R559
100k
1/2W
*C555
2kV
1500p
D544
D545
344V/68V
TPDF18
R541
100
R560
2.2M
1/2W
Q561
R564
100
D549
R543
10k
Q563
C545
2kV
470p
R568
47k
C556
35V
47u
TPDF19
Q565
Q564
*R558
47k
C544
50V
1u
*R562
15k
C560
50V
10u
R542
10k
Q566
D543
R565
56
R570
10k
*R550
1.2k
D556
DF3
3
2
1
V DAF
480P/1080I
12V
DF1
D14
8
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6
5
4
3
2
1
H DAF
GND
GND
NC
140V
J
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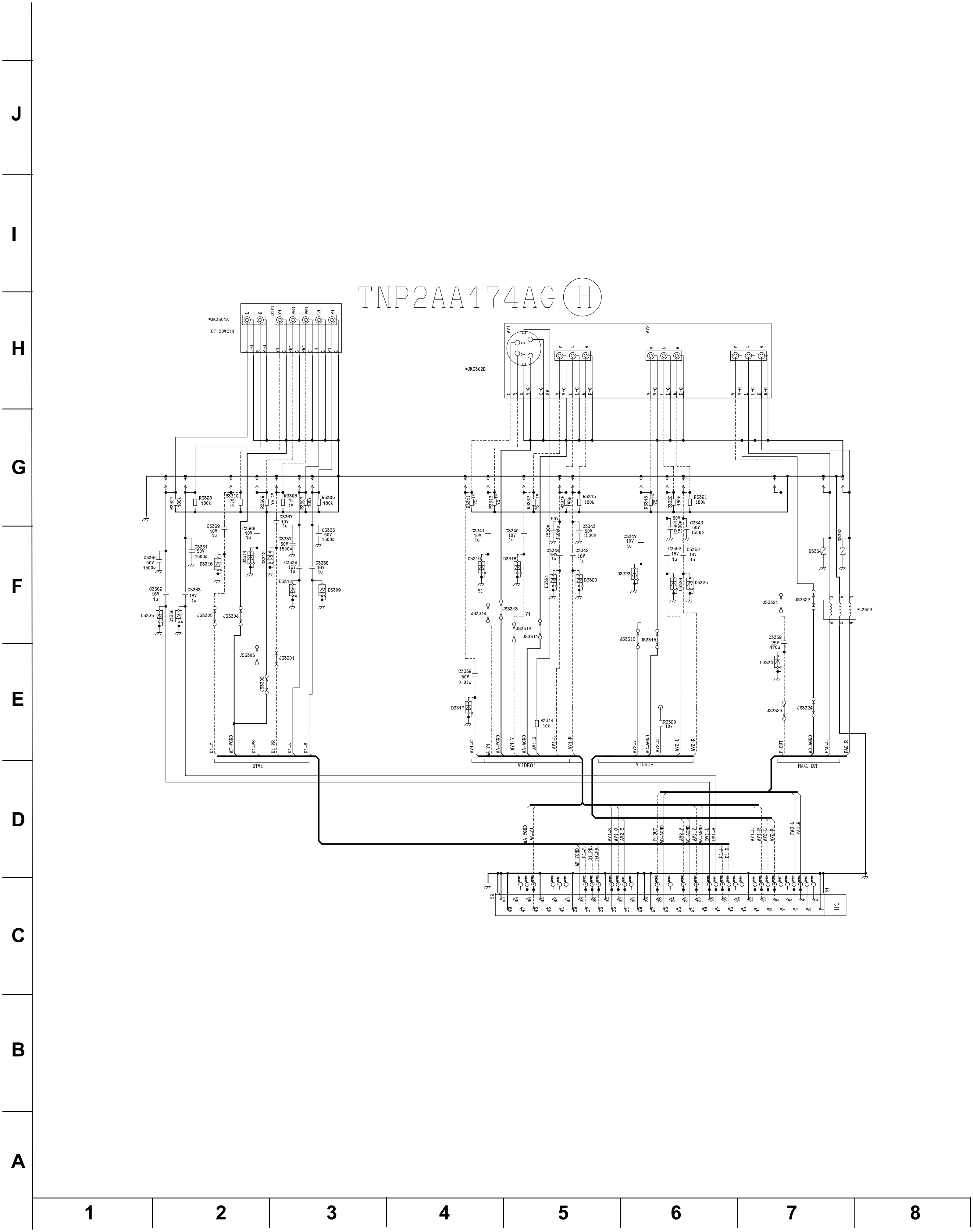
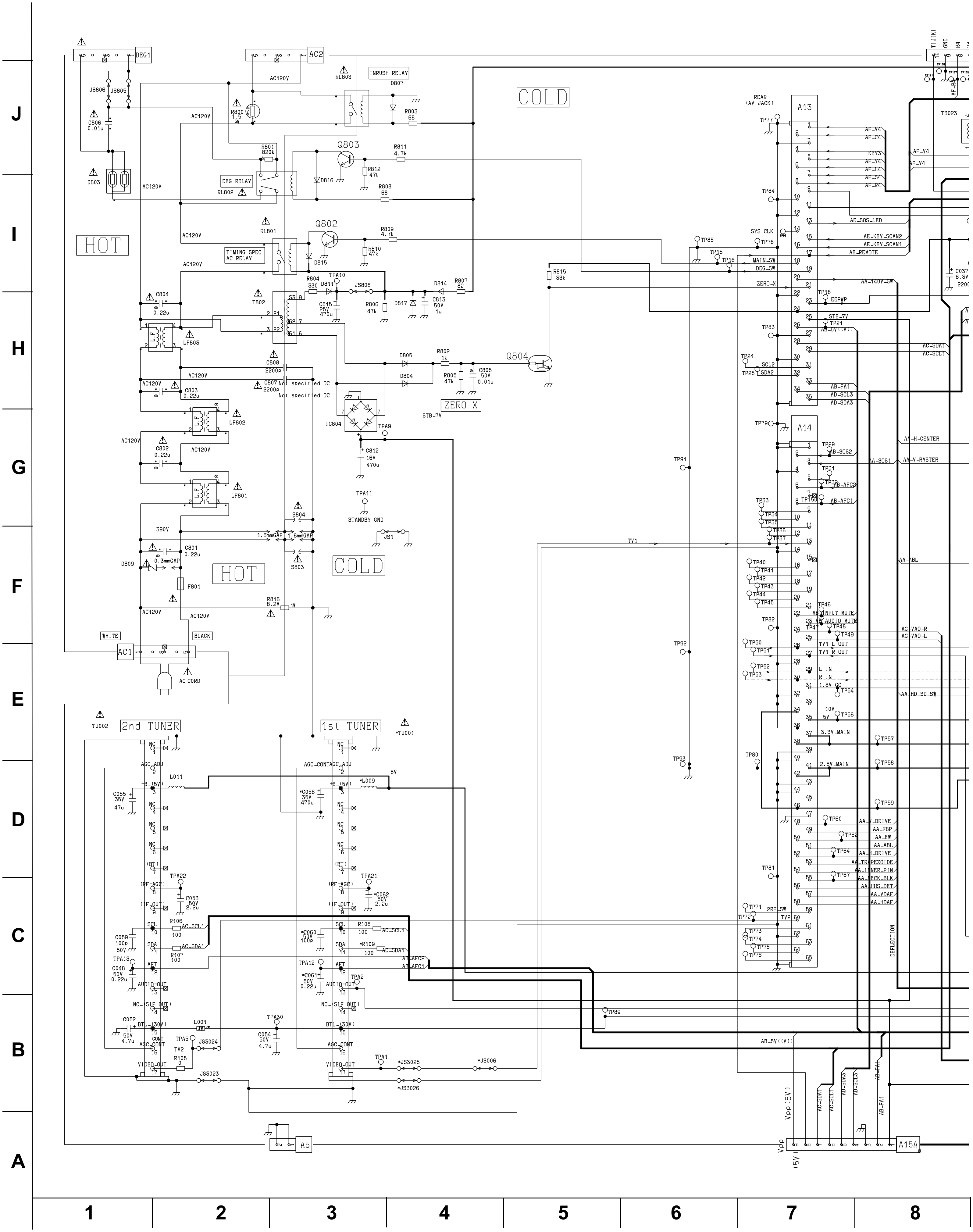
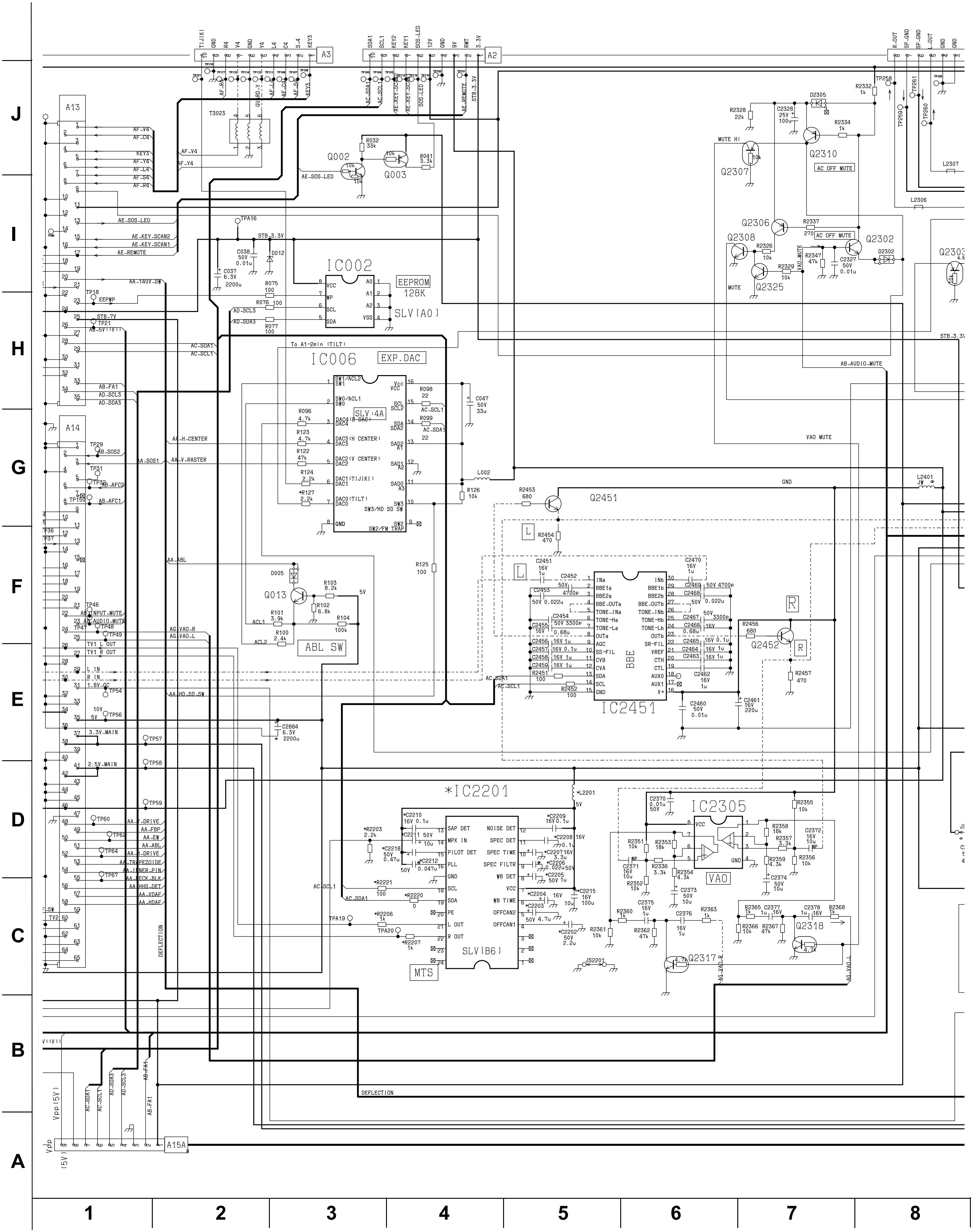
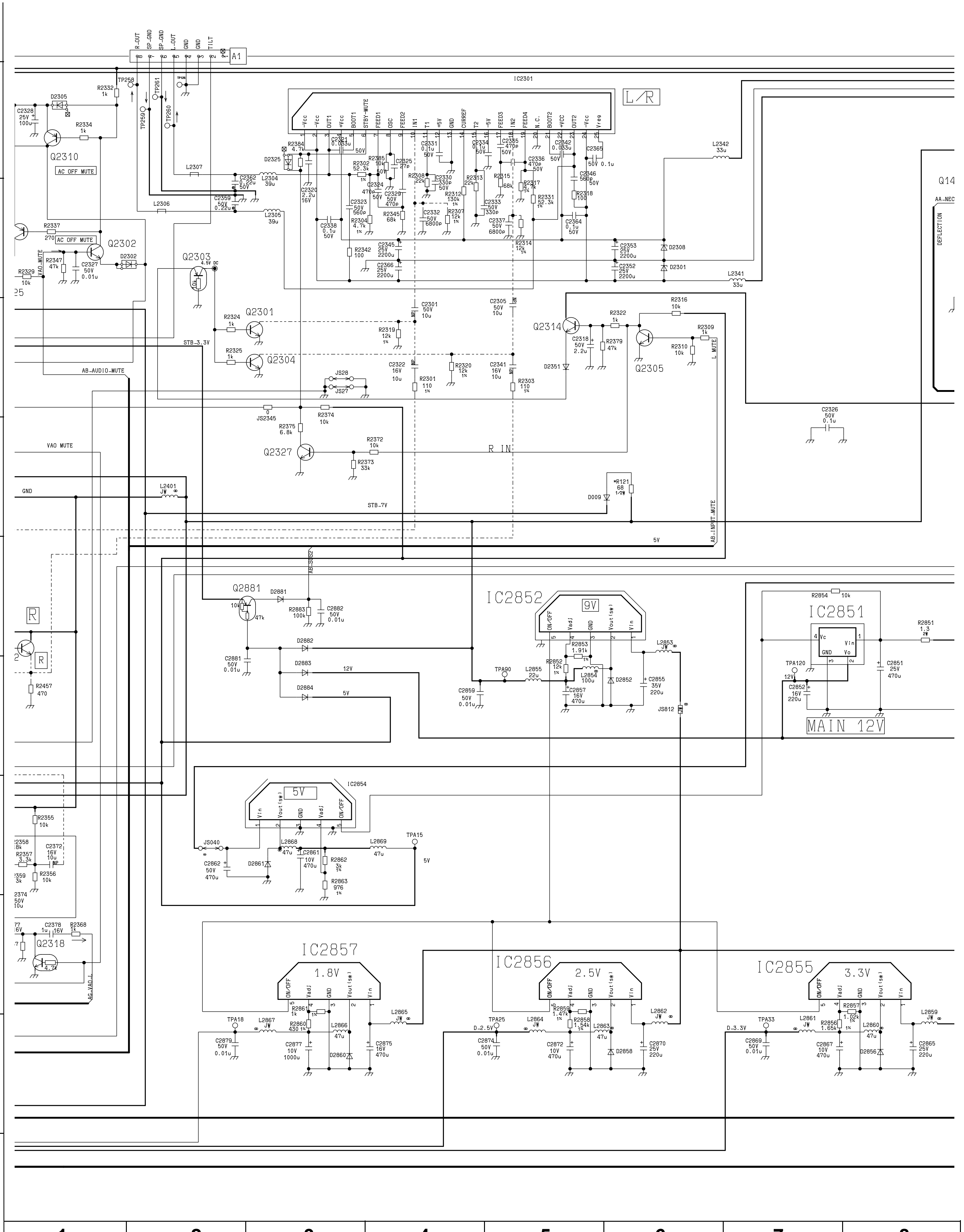
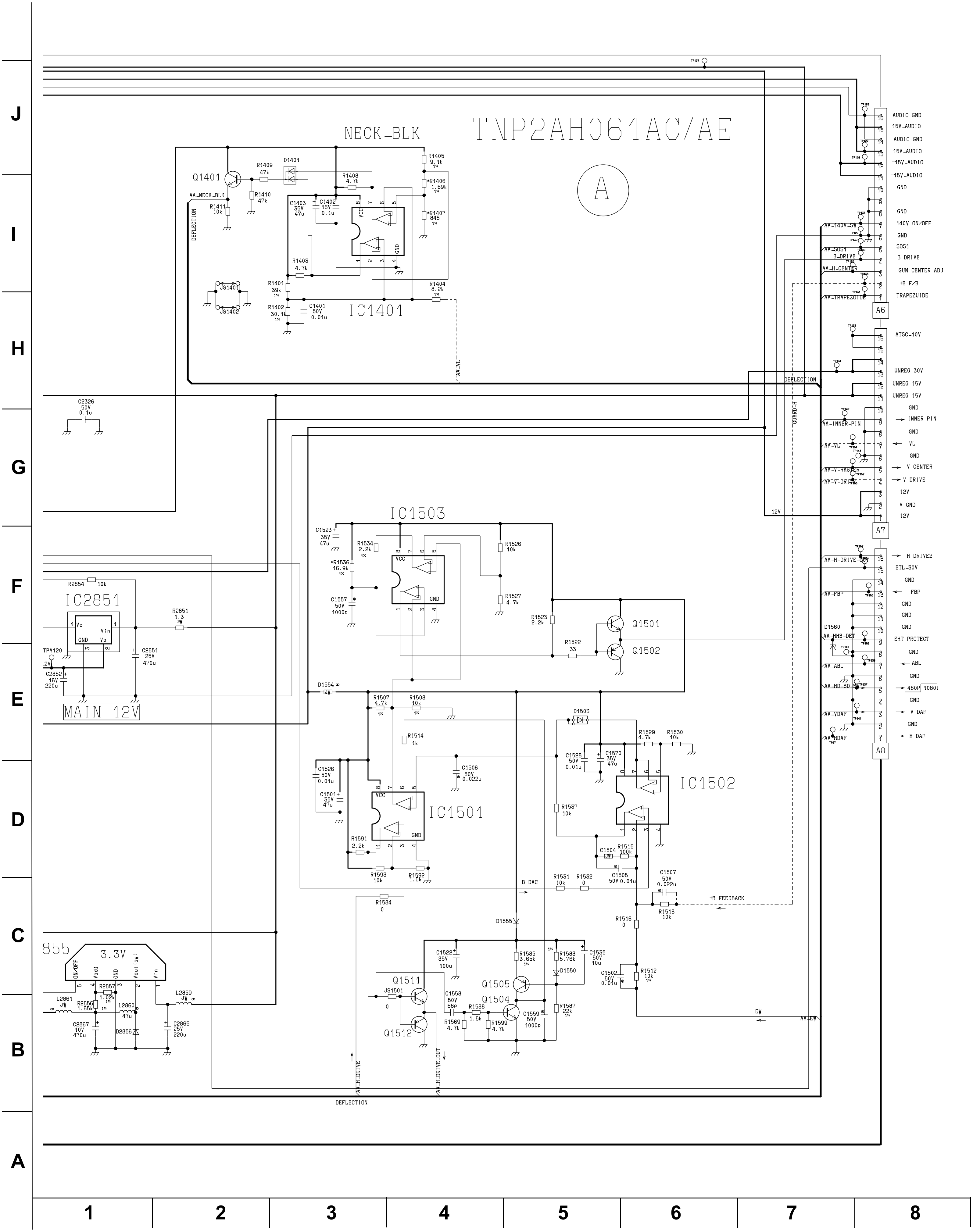
TNP2AA174AG (H)
*JK3301A
CT-30WC14
DTV1
*JK3302B
AV1
AV2
R3327 180k
R3328 180k
R3310 75 1%
R3309 75 1%
R3308 75 1%
R3307 180k
R3305 180k
R3311 75 1%
R3313 75 1%
R3312 75 1%
R3316 180k
R3315 180k
R3318 75
R3322 180k
R3321 180k
R3314 10k
R3320 10k
C3360 50V 1500p
C3361 50V 1500p
C3362 16V 1u
C3363 16V 1u
C3369 10V 1u
C3368 10V 1u
C3367 10V 1u
C3337 50V 1500p
C3338 16V 1u
C3335 50V 1500p
C3336 16V 1u
C3341 10V 1u
C3340 10V 1u
C3345 50V 1500p
C3343 50V 1500p
C3344 16V 1u
C3342 16V 1u
C3339 50V 0.01u
C3347 10V 1u
C3351 50V 1500p
C3349 50V 1500p
C3352 16V 1u
C3350 16V 1u
C3359 25V 470u
D3335
D3336
D3316
D3314
D3312
D3310
D3309
D3319
D3318
D3321
D3320
D3317
D3323
D3326
D3325
D3334
D3332
D3330
*L3303
JS3305
JS3304
JS3303
JS3302
JS3301
JS3314
JS3313
JS3312
JS3311
JS3316
JS3315
JS3321
JS3322
JS3323
JS3324
Y1
D1-Y
AF-VGND
D1-PB
D1-PR
D1-L
D1-R
DTV1
AV1-C
AA-Y1
AA-VGND
AV1-V
AA-AGND
AV1-S
AV1-L
AV1-R
VIDEO1
AV2-V
AC-AGND
AV2-S
AV2-L
AV2-R
VIDEO2
P-OUT
AD-AGND
FAO-L
FAO-R
PROG. OUT
H1
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8


DEG1
AC2
JS806
JS805
C806 0.01u
D803
AC120V
RL803
INRUSH RELAY
D807
R800 1.5 5W
R803 68
COLD
R801 820k
Q803
R811 4.7k
R812 47k
DEG RELAY
RL802
D816
R808 68
HOT
RL801
Q802
R809 4.7k
TIMING SPEC AC RELAY
R810 47k
D815
R804 330
D811
TPA10
JS808
D814
R807 82
R815 33k
C804 0.22u
T802
C815 25V 470u
R806 47k
D817
C813 50V 1u
LF803
D805
R802 1k
Q804
C808 2200p
D804
R805 47k
C805 50V 0.01u
C803 0.22u
C807 2200p
Not specified DC
ZERO X
LF802
IC804
STB_7V
TPA9
C802 0.22u
C812 16V 470u
LF801
TPA11
STANDBY GND
S804
390V
1.6mmGAP
JS1
C801 0.22u
D809
0.3mmGAP
S803
F801
R816 8.2M 1W
WHITE
BLACK
AC1
AC CORD
TU002
2nd TUNER
1st TUNER
*TU001
NC
AGC_ADJ
AGC_CONT
+B_(5V)
L011
*L009
5V
C055 35V 47u
*C056 35V 470u
(BT)
TPA22
TPA21
(RF-AGC)
C053 50V 2.2u
*C062 50V 2.2u
(IF_OUT)
SCL
SDA
AFT
R106 100
R108 100
AC_SCL1
AC_SDA1
C059 100p 50V
*C060 50V 100p
R107 100
*R109 100
TPA13
TPA12
C048 50V 0.22u
*C061 50V 0.22u
AB_AFC2
AB_AFC1
AUDIO_OUT
TPA2
NC-(SIF-OUT)
TP89
C052 50V 4.7u
BTL-(30V)
L001
TPA30
C054 50V 4.7u
TPA5
CONT AGC_CONT
JS3024
TV2
R105 0
TPA1
*JS3025
*JS006
VIDEO_OUT
JS3023
*JS3026
A5
REAR (AV JACK)
A13
TP77
AF_V4
AF_C4
KEY3
AF_Y4
AF_L4
AF_S4
AF_R4
TP84
AE_SOS_LED
SYS CLK
AE_KEY_SCAN2
AE_KEY_SCAN1
AE_REMOTE
TP85
TP78
TP15
TP16
MAIN_SW
DEG_SW
ZERO_X
AA_140V_SW
TP18
EEPWP
STB_7V
TP21
AB_5V(V)
TP83
AC_SDA1
AC_SCL1
TP24
SCL2
SDA2
TP25
AB_FA1
AD_SCL3
AD_SDA3
TP79
A14
TP29
AB_SOS2
AA_H_CENTER
AA_SOS1
AA_V_RASTER
TP31
TP32
AB_AFC2
TP150
AB_AFC1
TP91
TP33
TP34
TP35
TP36
TP37
TV1
TP40
TP41
TP42
TP43
TP44
TP45
AA_ABL
TP46
AB_INPUT_MUTE
AB_AUDIO_MUTE
TP47
TP48
TP49
TP82
AG_VAO_R
AG_VAO_L
TP50
TP51
TV1 L OUT
TV1 R OUT
TP92
TP52
TP53
L IN
R IN
1.8V_GC
TP54
AA_HD_SD_SW
10V
5V
TP56
3.3V_MAIN
TP57
TP80
TP93
2.5V_MAIN
TP58
TP59
TP60
AA_V_DRIVE
AA_FBP
TP62
AA_EW
AA_ABL
TP64
AA_H_DRIVE
AA_TRAPEZOIDE
AA_INNER_PIN
TP67
AA_NECK_BLK
AA_HHS_DET
AA_VDAF
AA_HDAF
TP81
TP71
2RF_SW
TP72
TV2
TP73
TP74
TP75
TP76
DEFLECTION
AB_5V(V)
Vpp(5V)
AC_SDA1
AC_SCL1
AD_SDA3
AD_SCL3
AB_FA1
A15A
TIJIKI
GND
T3023
AF_V4
AF_Y4
C037 6.3V
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8


A3
A2
A13
A14
A15A
T3023
IC002
EEPROM
128K
SLV[A0]
IC006
EXP.DAC
SLV:4A
Q002
Q003
Q013
D005
D012
ABL SW
To A1-2pin (TILT)
Q2451
Q2452
IC2451
BBE
L
R
*IC2201
SLV[B6]
MTS
IC2305
VAO
Q2317
Q2318
Q2302
Q2303
Q2306
Q2307
Q2308
Q2310
Q2325
D2302
D2305
AC OFF MUTE
MUTE H:
MUTE
VAO MUTE
STB-3.3V
AB-AUDIO-MUTE
GND
DEFLECTION
L2001
L2201
L2306
L2307
L2401
JS2201
TPA16
TPA19
TPA20
Vpp(5V)
AE-SOS-LED
AE-KEY-SCAN2
AE-KEY-SCAN1
AE-REMOTE
AA-140V-SW
AA-H-CENTER
AA-V-RASTER
AA-ABL
AA-HD-SD-SW
AG-VAO-R
AG-VAO-L
AC-SDA1
AC-SCL1
AD-SCL3
AD-SDA3
AB-FA1
3.3V-MAIN
2.5V-MAIN
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8

A-BOARD 2/4 TNP2AH061AC/AE CT-30WX54J/UJ, CT-30WC14J/UJ


A1
R-OUT
SP-GND
SP-GND
L-OUT
GND
GND
TILT
IC2301
L/R
-Vcc
-Vcc
OUT1
+Vcc
BOOT1
STBY-MUTE
FEED1
OSC
FEED2
IN1
T1
+5V
GND
CURREF
T2
-5V
FEED3
IN2
FEED4
N.C.
BOOT2
+VCC
OUT2
-Vcc
Vreg
Q2310
AC OFF MUTE
Q2302
AC OFF MUTE
Q2303
4.5V DC
Q2301
Q2304
Q2314
Q2305
Q2327
R IN
STB-3.3V
AB-AUDIO-MUTE
VAO MUTE
GND
STB-7V
5V
AB-INPUT-MUTE
L MUTE
VAO-MUTE
DEFLECTION
AA-NEC
Q14
Q2881
IC2852
9V
ON/OFF
Vadj
GND
Vout(sw)
Vin
IC2851
MAIN 12V
IC2854
5V
12V
5V
IC2857
1.8V
IC2856
2.5V
D-2.5V
IC2855
3.3V
D-3.3V
Q2318
AG_VAO_L
R
R
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8


TNP2AH061AC/AE
A
NECK_BLK
Q1401
R1409 47k
D1401
R1405 9.1k 1%
R1408 4.7k
*R1406 1.69k 1%
R1410 47k
R1411 10k
AA-NECK-BLK
DEFLECTION
C1403 35V 47u
C1402 16V 0.1u
*R1407 845 1%
VCC
GND
R1403 4.7k
R1401 39k 1%
R1404 8.2k 1%
C1401 50V 0.01u
R1402 30.1k 1%
IC1401
JS1401
JS1402
AA-VL
C2326 50V 0.1u
AUDIO GND
15V-AUDIO
AUDIO GND
15V-AUDIO
-15V-AUDIO
-15V-AUDIO
GND
GND
140V ON/OFF
GND
SOS1
B DRIVE
GUN CENTER ADJ
+B F/B
TRAPEZUIDE
AA-140V-SW
AA-SOS1
B-DRIVE
AA-H-CENTER
AA-TRAPEZOIDE
A6
ATSC-10V
UNREG 30V
UNREG 15V
UNREG 15V
GND
INNER PIN
GND
VL
GND
V CENTER
V DRIVE
12V
V GND
12V
DEFLECTION
GUARD-H
AA-INNER-PIN
AA-VL
AA-V-RASTER
AA-V-DRIVE
12V
A7
IC1503
C1523 35V 47u
R1534 2.2k 1%
*R1536 16.9k 1%
C1557 50V 1000p
R1526 10k
R1527 4.7k
R1523 2.2k
Q1501
Q1502
R1522 33
H DRIVE2
BTL-30V
GND
FBP
GND
GND
GND
EHT PROTECT
GND
ABL
GND
480P 1080I
GND
V DAF
GND
H DAF
AA-H-DRIVE-OUT
AA-FBP
D1560
AA-HHS-DET
AA-ABL
AA-HD-SD
AA-VDAF
AA-HDAF
A8
R2854 10k
IC2851
R2851 1.3 2W
Vc
Vin
GND
Vo
C2851 25V 470u
TPA120
12V
C2852 16V 220u
MAIN 12V
D1554
R1507 4.7k 1%
R1508 10k 1%
D1503
R1514 1k
R1529 4.7k
R1530 10k
C1526 50V 0.01u
C1501 35V 47u
C1506 50V 0.022u
C1528 50V 0.01u
C1570 35V 47u
IC1502
IC1501
R1537 10k
R1591 2.2k
R1593 10k
R1592 1.5k
C1504
R1515 100k
C1505 50V 0.01u
B DAC
R1531 10k
R1532 0
C1507 50V 0.022u
R1584 0
+B FEEDBACK
R1518 10k
R1516 0
D1555
855
3.3V
ON/OFF
Vadj
GND
Vout(sw)
Vin
R2857 1.02k 1%
R2856 1.65k 1%
L2861 JW
L2860 47u
L2859 JW
C2867 10V 470u
D2856
C2865 25V 220u
C1522 35V 100u
R1585 3.65k 1%
R1583 5.76k 1%
C1535 50V 10u
D1550
Q1511
JS1501 0
C1558 50V 68p
Q1505
Q1504
C1502 50V 0.01u
R1512 10k 1%
R1588 1.5k
R1569 4.7k
R1599 4.7k
C1559 50V 1000p
R1587 22k 1%
Q1512
EW
AA-EW
AA-H-DRIVE
AA-H-DRIVE-OUT
DEFLECTION
J
I
H
G
F
E
D
C
B
A
1
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# Service Manual

TOP NEXT

MTNC040418C1

B19 Canada: B05

# Service Manual

Color Television

- CT-32HL44J
  CT-32HL44UJ

GN1

Panasonic®

**IMPORTANT SAFETY NOTICE**

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

TOP NEXT

# 1 Safety precautions

TOP PREVIOUS NEXT

## General guidelines

An isolation transformer should always be used during the servicing of a receiver whose chassis is not isolated from AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injuryfrom electrical shocks. It will also protect the receiver from being damaged by accidental shorting that may occur during servicing.

When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)

Always replace protective devices, such as fish paper, isolation resistors and capacitors, and shields after servicing the receiver. Use only manufacturer s recommended rating for fuses, circuits breakers, etc.

High potentials are present when this receiver is operating. Operation of the receiver without the rear cover introduces danger for electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautionswhen servicing high voltage equipment.

Extreme care should be practiced when handling the picture tube. Rough handling may cause it to implode due to atmospheric pressure. (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, usesafety goggles and heavy gloves for protection. Discharge the picture tube by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. dag ground lead) to the anode with a wellinsulated wire or use a grounding probe.Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to x ray radiation.

The test picture tube used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provide shielding for the tube viewing area against x ray radiation as well as implosion. The magnetic shieldlimits the x ray radiation around the bell of the picture tube in addition to the restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling 50kV without causing x ray radiation.

Before returning a serviced receiver to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. Do not use a line isolation transformer when testing.

## Leakage current cold check

Unplug the A.C. cord and connect a jumper between the two plug prongs.Measure the resistance between the jumpered AC plug and expose metallic parts such as screwheads, antenna terminals, control shafts, etc. If the exposed metallic part has a returnpath to the chassis, the reading should be between 240kΩ and 5.2MΩ. If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.

## Leakage current hot check

Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check.

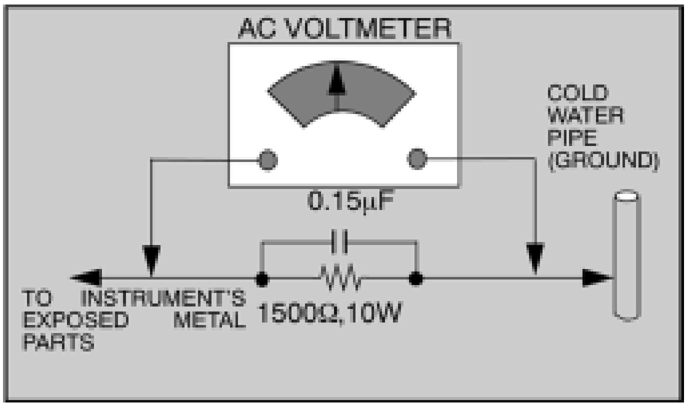
Connect a 1.5kΩ 10 watt resistor in parallel with a 0.15μF capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.

Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.

Repeat the procedure and measure the voltage present with all other exposed metallic parts.

Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson model 229, Sencore model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 0.5 milliamp. Ifany measurement is out of the specified limits, there is a possibility of a shock hazard and the receiver must be repaired and rechecked before it is returned to the customer.

Hot check circuit



## Insulation test

Connect an insulation tester between an exposed metallic part and A.C. line. Apply 1500VAC/60Hz for 1 second. Confirm that the current measurement is 0.5mA ~ 2.0mA. Repeat test with other metallic exposed parts.

## X ray radiation

## WARNING

The potential source of x ray radiation in the TV set is in the high voltage section and the picture tube.

## NOTE

It is important to use an accurate, calibrated high voltage meter.

Set the brightness, picture, sharpness and color controls to minimum.

Measure the high voltage. With a 480i signal the high voltage should be 31.0kV ± 0.3kV and with a 1080i signal the high voltage should be 31.0kV ± 0.3kV. If the upper limit is out of tolerance, immediate service and correctionis required to insure safe operation and to prevent the possibility of premature component failure.

## Horizontal oscillator disable circuit test

This test must be performed as a final check before the receiver is returned to the customer. See horizontal oscillator disable circuit procedure check in this manual.

TOP PREVIOUS NEXT

# 2 Service notes

TOP PREVIOUS NEXT

## NOTE

These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.

## Leadless chip component (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chips capacitor or resistor board solder pads may have holes through the board,however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.

Chip resistor have a three digit numerical resistance code, 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6kΩ resistor, 0 = 0Ω (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

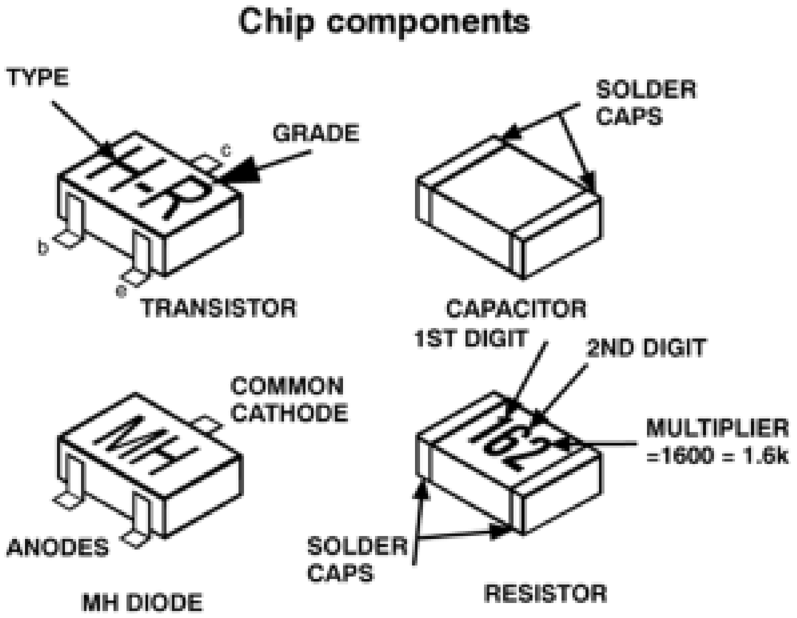
## Component removal

1. Use solder wick to remove solder from component end caps or terminal.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.

## Chip component installation

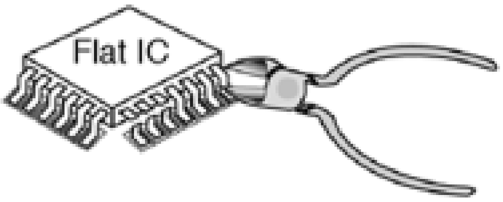
1. Put a small amount of solder on the board soldering pads.

2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.

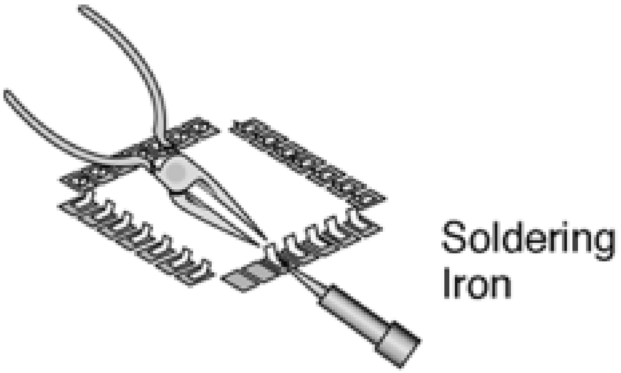

Chip components
TYPE
GRADE
H-R
c
b
e
TRANSISTOR
SOLDER CAPS
CAPACITOR
1ST DIGIT
2ND DIGIT
COMMON CATHODE
MH
162
MULTIPLIER =1600 = 1.6k
ANODES
SOLDER CAPS
MH DIODE
RESISTOR

## How to replace flat ic (required tools)

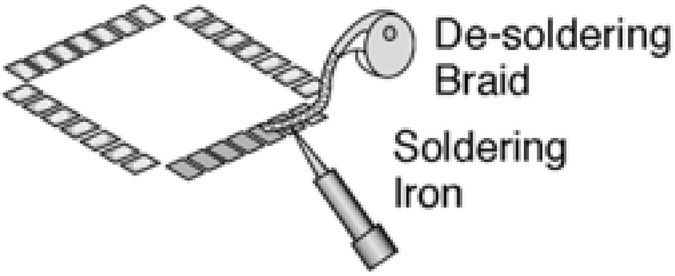
1. Remove the solder from all of the pins of a Flat IC by using a desolder braid



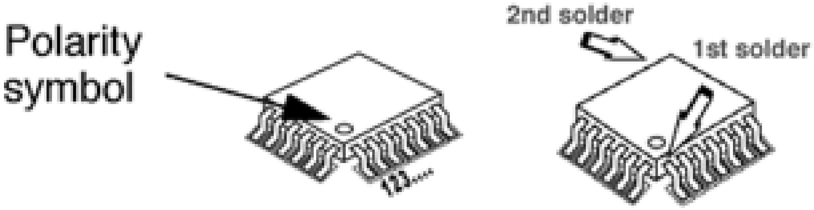
2. Put the iron wire under the pins of the Flat IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.


Soldering Iron

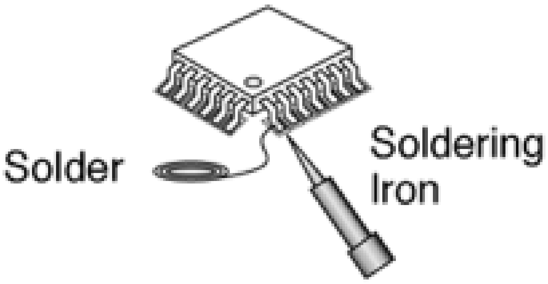
3. Remove the solder from all the pads of the Flat IC by using a de solder braid


De-soldering
Braid
Soldering
Iron

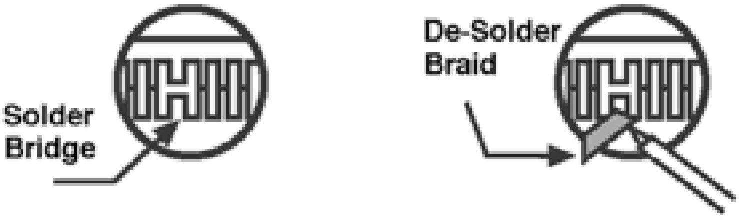
4. Position the new Flat IC in place (apply the pins of the Flat IC to the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol


Polarity
symbol
123....
2nd solder
1st solder

5. Solder all pins to the soldering pads using a fine tipped soldering iron


Solder
Soldering
Iron

6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de solder braid as shown in the figure below


Solder
Bridge
De-Solder
Braid

IMPORTANT

To protect against possible damage to the solid state devices due to arching or static discharge, make certain that all ground wires and CRT DAG wire are securely connected.

## CAUTION

The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the receiver to avoid damage to the test equipment or to the chassis.

Connect the test equipment to the proper ground(hot) or (cold) when servicing, or incorrect voltages will be measured.

# WARNING

This receiver has been designed to meet or exceed applicable safety and x-ray radiation protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to x-ray radiation and shock and fire hazard, parts indicated with the symbol on the schematic must be replaced with identical parts. Order parts from the manufacturer s partscenter using the parts numbers shown in this service manual, or provide the chassis number and the part reference number.

For optimum performance and reliability, all other parts should be replaced with components of identical specification.

## HORIZONTAL OSCILLATOR DISABLE CIRCUIT

This chassis employs a special circuit to protect against excessive high voltage and beam current. If, for any reason, the high voltage and beam current exceed a predetermined level this protective circuit activates and detunes the horizontal oscillatorthat limits the high voltage. The over-voltage protection circuit is not adjustable. However, if components indicated by the symbol on the schematic in either the horizontal sweep system or the over-voltage protection circuit itself are changed, theoperation of the circuit should be checked using the following procedure:

## Equipment needed to check the disabled circuit:

1. High voltage meter (0 ~ 50kV)
2. Variac or isolation transformer
3. D.C. current meter
4. Digital voltmeter

## PREPARATION

1. Connect receiver to A.C. 120 Volts. Do not turn ON.
2. Connect HIGH VOLTAGE meter to 2nd anode (H.V. button).

   ### NOTE

   Use cold ground for negative lead.

3. Connect the ammeter serial from the flyback anode lead to the picture tube anode socket.

PROCEDURE

1. Confirm that beam current is 2.4_mA.
2. Adjust VR524 so that high voltage is 31.0 ± 0.3kV.
3. Adjust VR538 so that digital meter reads 2.3 ± 0.05V
4. Apply a black pattern
5. Confirm that high voltage protector (SOS) operates at 38.5kV or less by adjusting VR524.
6. Turn VR524 counter clockwise, turn tv on and apply a white pattern.
7. Adjust VR524 so that high voltage meter reads 31.0 ± 0.3kV
8. Once the adjustment is completed, apply a bond on VR538 and VR538. Confirm B+ 142V ± 6.0V with 120V A.C. applied.

   NOTE

   If high voltage is not within the specified limit the cause must be determined before the receiver is returned to the owner.

TOP PREVIOUS NEXT

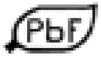
# 3 About lead free solder (PbF)

TOP PREVIOUS NEXT

NOTE

Lead is listed as (Pb) in the periodic table of elements.
In the information below, Pb will refer to lead solder, and PbF will refer to Lead Free Solder.
The lead free solder used in our manufacturing process and discussed below is (Sn+Ag+Cu).
Thatis Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it s manufacture due to environmental conservation issues. For service and repair work, we d suggest the use of Pb free solder as well, although Pb solder may be used.
PCBs manufacturedusing lead free solder will have the PbF or a leaf symbol stamped on the back of PCB.

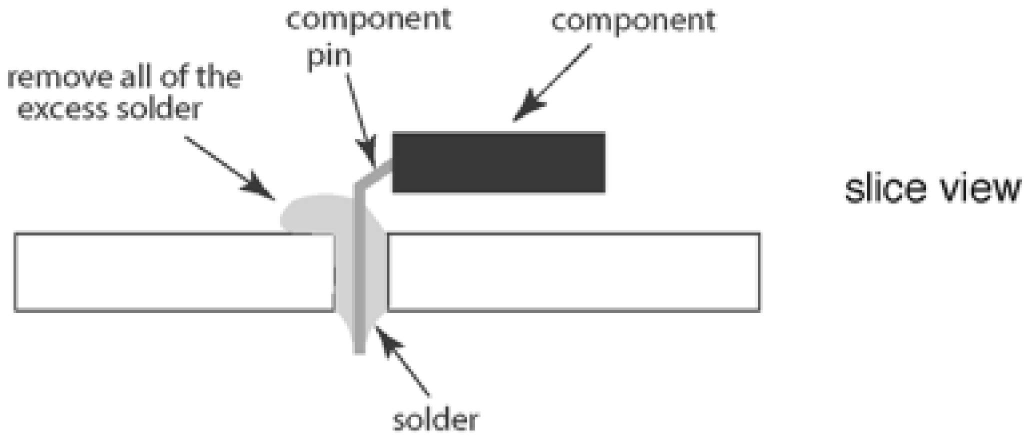


CAUTION

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30 ~ 40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).

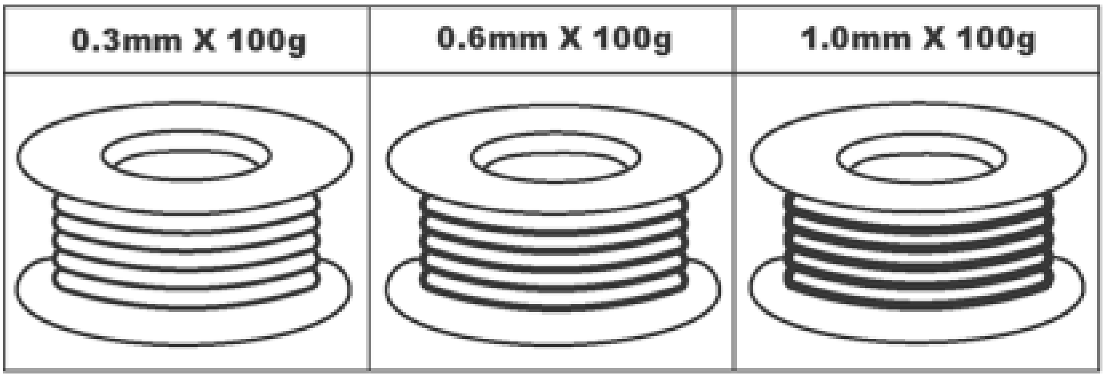
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C).
  If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If thisis not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.

- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side.



## Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also beused.



TOP PREVIOUS NEXT

# 4 Receiver feature table

TOP PREVIOUS NEXT

| FEATURE/MODEL | CT-32HL44J/UJ |
|---|---|
| CHASSIS | BP418 |
| MICRO | 256K |
| MENU LANGUAGE | ENG/SPAN/FR |
| CLOSE CAPTION | X |
| V-CHIP (USA/CANADA | X |
| CHANNEL INFO BANNER | X |
| VIDEO INPUT SKIP | SKIP |
| CHANNEL COUNT | 181 |
| PIP (1T), 2T PIP (2T), 2T SPLIT | 2T SPLIT |
| REMOTE CONTROL (W/LIGHT) | EUR7603ZF0 |
| CRT SUPPLIER | MDDA PF SST |
| FAMILY | GN1 |
| COMB FILTER | MOTION ADP, 3DY/C |
| HEC/VEC (X=BOTH) | X |
| VM | X (SELECTABLE) |
| V/A NORM (X=BOTH) | X |
| COLOR TEMP | X |
| AIP | X |
| PRESET/INPUT LABELING | X |
| VIDEO PICTURE MEMORY | X |
| DIGITAL SCAN RATE | 1080i, 480p |
| NTSC LINE DOUBLER | 480p PROGRESSIVE |
| MTS/SAP/DBX | X |
| BUILT-IN AUDIO POWER | 15W X 2 |
| No. OF SPEAKERS | 2 |
| BASS/BALANCE/TREBLE CONTROL | X |
| AI SOUND | X |
| SURROUND | X |
| SPATIALIZER/BBE | BBE |
| A/V IN (REAR/FRONT) | 4(3/1) |
| PROGRAM OUT | X |
| AUDIO OUT (FAO: F, VAO:V) | F, V |
| COMPONENT INPUT (Y, Pb, Pr) | 2 |

| | |
|---|---|
| S-VHS INPUT (REAR/FRONT) | 2/1 |
| HDMI/HDCP INPUT | X |
| WEIGHT (KG/LB) | 98KG/216LB |
| DIMENSIONS (W/D/H) mm | 1094.0/742/891 |

Note:

Specifications are subject to change without notice or obligation. Dimensions and weights are approximate.

TOP PREVIOUS NEXT

# 5 Board description table

TOP PREVIOUS NEXT

| BOARD | CT-32HL44J/UJ | DESCRIPTION |
|---|---|---|
| A-BOARD | TNP2AH061AD | MAIN CHASSIS |
| D-BOARD | TNP2AH062AD | HIGH VOLTAGE AND DEFLECTION |
| DG-BOARD | TNP2AA173AD | DIGITAL VIDEO |
| DF-BOARD | TNP2AA172AB | DYNAMIC FOCUS |
| H-BOARD | TNP2AA174AB | REAR A/V |
| L-BOARD | TNP2AA169 | CRT BOARD |
| K-BOARD | TNP2AA171AD | KEY BOARD |
| G-BOARD | TNP2AA170AD | FRONT A/V |

NOTE

When ordering a replacement board assembly, append an S to the board number

EXAMPLE

To order the A Board, the replacement board is TNP2AH061ADS

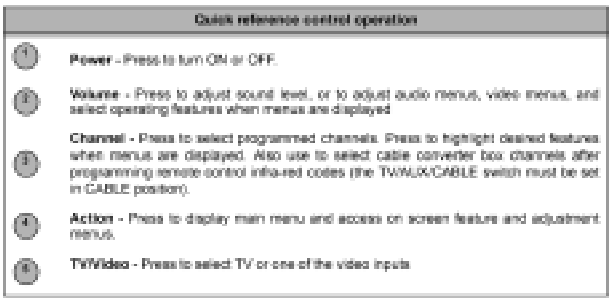
NOTE:

The DG-Board is non-serviceable. If this board is defective, replace it with a new board.

TOP PREVIOUS NEXT

# 6 TV Location of controls

TOP PREVIOUS NEXT



| Quick reference control operation | |
|---|---|
| ① | **Power** - Press to turn ON or OFF. |
| ② | **Volume** - Press to adjust sound level, or to adjust audio menus, video menus, and select operating features when menus are displayed |
| ③ | **Channel** - Press to select programmed channels. Press to highlight desired features when menus are displayed. Also use to select cable converter box channels after programming remote control infra-red codes (the TV/AUX/CABLE switch must be set in CABLE position). |
| ④ | **Action** - Press to display main menu and access on screen feature and adjustment menus. |
| ⑤ | **TV/Video** - Press to select TV or one of the video inputs. |

TOP PREVIOUS NEXT

# 7 Location of controls (EUR7603ZF0 remote)

TOP PREVIOUS NEXT

**POWER**
Press to turn ON and OFF.

**TV - VCR - DBS/CBL - DVD**
Press to select a component.

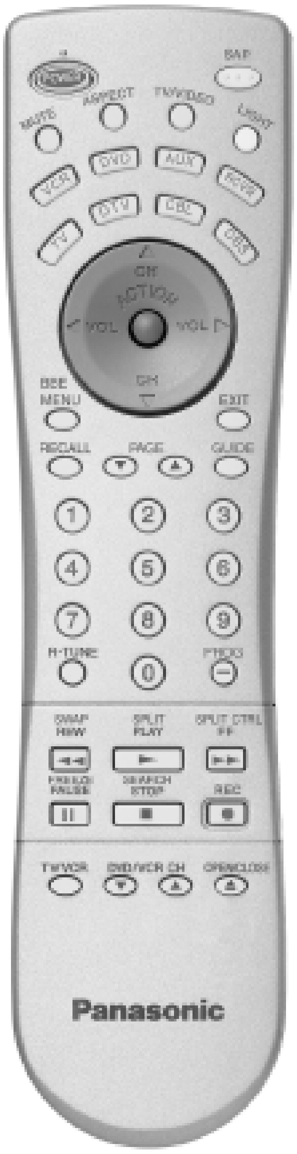
**MUTE**
Press to mute sound.

**TV/VIDEO**
Press to select TV, Video mode.

**MENU**
Press to select TV, Video mode.

**KEYBOARD**
Press to select any channel.

**R-TUNE**
Press to switch to previously viewed channel or video mode.


POWER
SAP
MUTE
ASPECT
TV/VIDEO
LIGHT
DVD
AUX
VCR
RCVR
DTV
CBL
TV
DBS
CH
ACTION
VOL
VOL
CH
BBE
MENU
EXIT
RECALL
PAGE
GUIDE
1
2
3
4
5
6
7
8
9
R-TUNE
0
PROG
SWAP
REW
SPLIT
PLAY
SPLIT CTRL
FF
FREEZE
PAUSE
SEARCH
STOP
REC
TV/VCR
DVD/VCR CH
OPEN/CLOSE
Panasonic

**SAP**
Press to acces the secondary audio program broadcast.

**CH**
Press to select next or previous channel and navigate in menus.

**VOL**
Press to adjust TV sound and navigate in menus.

**RECALL**
Press to display time, channel sleep timer and other options.

**GUIDE**
DBS and DVD functions button.

**EXIT**
DBS menu function button.

**PROG**
Press for delimiter between major and minor channel number.

Note:

For additional information about this remote please refer to the owner s manual section remote operation, listed on the parts list section.

TOP PREVIOUS NEXT

# 8 Auto diagnosis feature

TOP PREVIOUS NEXT

This receiver incorporates a new self diagnosis feature. With this new feature will be easier for the technician to detect the failures. There is a LED located by the keyboard on the front panel, this LED will start flashing when a failure is detectedby the circuits located in specific areas, depending on how many times the LED is flashing, this will tell you what circuit should be checked. Make a count of flashing and see the table shown below. Please use this feature effectively especially forintermittent problems.

SOS of front LED

| FLASHES | POSSIBLE CIRCUIT | SOS |
|---|---|---|
| 1 | POWER+140 | 140 OCP |
| 2 | LOW B+ D.C. | SOS 2 |
| 4 | HI VOLTAGE HHS | HHS |
| 5 | IC4511 | GC2M |
| 6 | IC4518 | GC2S |
| 8 | AUDIO AMP | SOS 4 |

### AFTER THE COUNT

Proceed to check that area, verify what board is the problem located, this way the area to check will be reduced until the failure is found.

TOP PREVIOUS NEXT

# 9 EEPROM copy jig

TOP PREVIOUS NEXT

This CTV has a feature that allows to clone or back-up main EEPROM data adjustments from a CTV to other by connecting a jig to the CTV set. A jig part number TXFJIG02SER, is available through Matsushita/Panasonic Services.

Preparation:

To connect this jig, remove the lower back cover as instructed on disassembly for service section on this service manual and insert the jig into A15 connector located on the A-Board.

Procedure to copy data:

1. Enter to service mode and display service menu.
2. Select AREA DAC and then press ACTION button on remote to enter. Press VOL right/left to select one of the following options then press ACTION:
    - Select ALL to copy all main EEPROM data
    - Select ADJ to copy only adjustment data.
    - Select FIX to copy only fix data
3. To copy data from main EEPROM to jig, select IN→EX DAC and press ACTION button on remote.
4. To copy data from jig to main EEPROM, select EX→IN DAC and press ACTION button on remote.

TOP PREVIOUS NEXT

# 10 Dissasembly for service

TOP PREVIOUS NEXT

## Back cover

Remove all the screws marked with an arrow (←) from the back of the receiver

NOTE

Screw configuration, type, and number of screws vary depending on the model of the receiver serviced and the application; various models are covered in this manual. Use same hardware when reassembling the receiver.

- 4 screws at the top edge of the receiver.
- screws by the A/V cover.
- 1 screw at the lower part of TV.
- 1 screw at each lower corner of the receiver.

NOTE

Extensions for board connectors may be needed to take voltages on some boards, please see parts list section for part numbers in this service manual.

## A-Board - Main chassis

The A-Board assembly rest on a chassis tray along with the D-Board.

Slide chassis tray out. Gently lift the tray and pull out. Disconnect plug connectors; release wire ties and holders as required for complete chassis removal.

1. A-Board is secured to the chassis tray with screws.
2. The A-Board is mated to the D-Board by flexible connectors and to G-Board: A6, A7 & A8 (D6, D7 & D8 on the D-Board, respectively) and A1, A2 & A3 (G1, G2 & G3). To remove either boards, unplug the connectorson the A-Board.

   NOTE

Some tie-wraps that secure the wire dressings may need to be unfastened for chassis removal.

## D-Board - Deflection

The D-Board assembly rest on a chassis tray along with the A-Board.

Slide chassis tray out. Gently lift the tray and pull out. Disconnect plug connectors; release wire ties and holders as required for complete chassis removal.

1. D-Board is secured to the chassis tray with screws.
2. The D-Board is mated to the A-Board and G-Board by flexible connectors: D6, D7 & D8 (A6, A7 & A7 on the A-Board, respectively) and D9 (G40 on the G-Board). To remove either boards, unplug the connectors.

   NOTE

   Some tie-wraps that secure the wire dressings may need to be unfastened for chassis removal

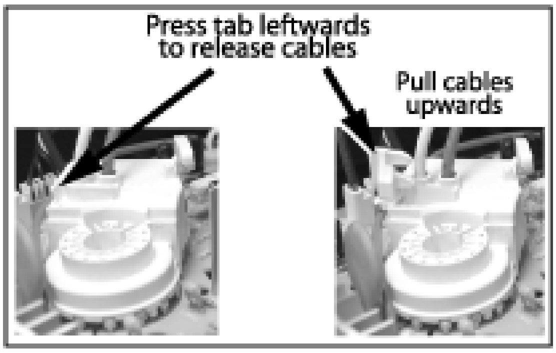
## L-Board - CRT output

Plugs into the socket on the CRT neck.

To remove this board, first unplug the board from the CRT neck, then disconnect L1, L2 and L3 connectors, to disconnect the focus F1(red cable) & F2 (white cable) cables from the CRT socker, pull the tab and release the cables (see figure).Disconnect L10, L11, L12, L14 & L15 by inserting a wire in both holes then pull the cable out.

To reinsert back the cables, remember the original position of cables, F1 (red cable) goes to A on the CRT socket and F2 (white cable) goes to B on the CRT socket.

F1 and F2 cables release



## DG-Board

The DG-Board is assembled on the main chassis (A-Board) plugged at the A13 and A14 (DG3 and DG4 respectively) connectors.

## NOTE

This board is not-serviceable.
When removing this board pull carefully.

## DF-Board

Plugs onto the right side of the D-Board at D14 and D16 connectors (P2, P11, P12 and P3 on P-Board, respectively); First remove the screw that holds the metal board, from the flyback and from the chassis tray and then use a flat head screwdriverto release the connector locking tabs and pull upwards the board.

## G-Board

Mated to A-Board by three flexible connectors A1, A2, A3 and D9 from D-Board. To remove this board, first unplug the flexible connectors, then RT1 and G5 connectors, then pull upwards the board while unlock the tabs from the chassis tray.

## Buttons assembly

This assembly is hold with two screws to the front cabinet. To remove, pull out the chassis and remove the two screws from each side of the assembly.

## Speakers

Each speaker is secured to a plastic base with 4 screws, and the plastic base is secured to the from cabinet with three screws. To remove the small speaker from the plastic base, unscrew the four screws; To remove the bigger speaker, disassemblythe plastic base by removing the five screws from the back of the plastic base.

## NOTE

When reassembling speakers be sure to connect the speaker wires to the correct speaker lead (+) (-)

10.1 Disassembly for CRT replacement

TOP PREVIOUS NEXT

# 10.1 Disassembly for CRT replacement

TOP PREVIOUS NEXT

1. Discharge the CRT as instructed in the safety precautions section and remove 2nd anode button from the CRT.
2. Remove speaker modules (R and L)
3. Perform complete removal of chassis, as instructed in disassembly for service section.

   NOTE

   When remounting the CRT, reuse the metal sheet located in the lower part of the cabinet holding the CRT, hold with screws to the cabinet. This metal sheet is not supplied with the CRT replacement.

CRT replacement

1. Perform disassembly for CRT replacement procedure.
2. Insure that the CRT H.V. Anode button is discharged before handling the CRT. Read the safety precautions section on handling the picture tube.
3. Remove the components from the CRT neck and place the cabinet face down on a soft pad.
4. Note the original order for the CRT mounting hardware as they are remove from the CRT mounting brackets at each corner of the CRT.
5. Remove the CRT with the degaussing coil and the dag ground braid attached.
6. Note the original locations and mounting of the degaussing coil and the dag ground assembly to insure proper reinstallation on the replacement CRT.

   To remove and remount the degaussing coil:

   - Unhook the coil spring from the bottom corners of the CRT ears.
   - Release the braid loop from the upper corners of the CRT ears.
7. Mount the dag ground braid on the replacement CRT. Position the degaussing coil with new ties.

Dress coil as was on the original CRT.

8. Replace the components on CRT neck and reinstall into cabinet. Verify that all ground wires and circuit board plugs get connected.

   NOTE

   Reuse all the clampers and mounting brackets from the degauss coil and screen, and when remounting the degauss coil assure that is not touching the speakers, this can be done by placing some tape, this may cause mask vibration. The mounting brackets andclampers are not supplied with the replacements.

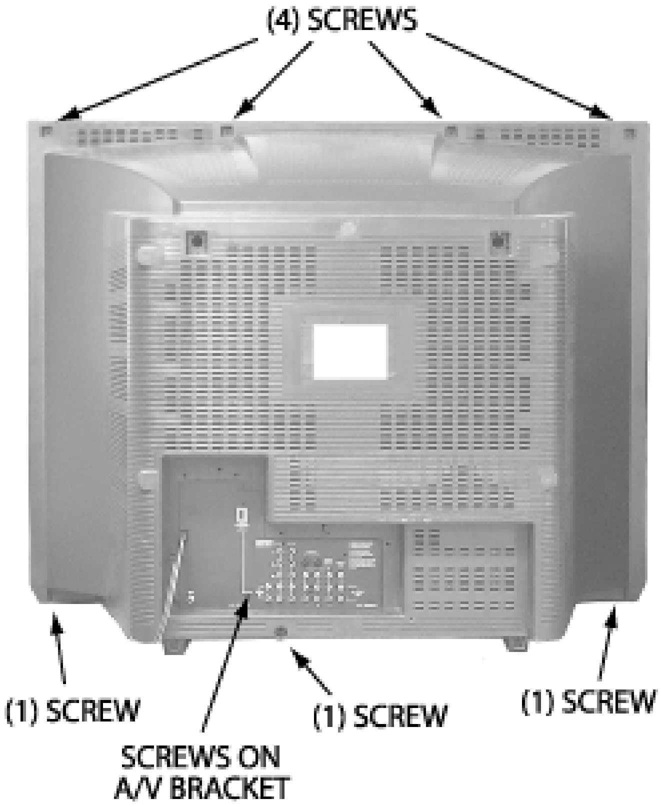
   IMPORTANT NOTICE

   When ordering the CRT, please order CRT and CRT kit also. Please see parts list section for part numbers

TOP PREVIOUS NEXT

# 11 Back cover removal

TOP PREVIOUS NEXT

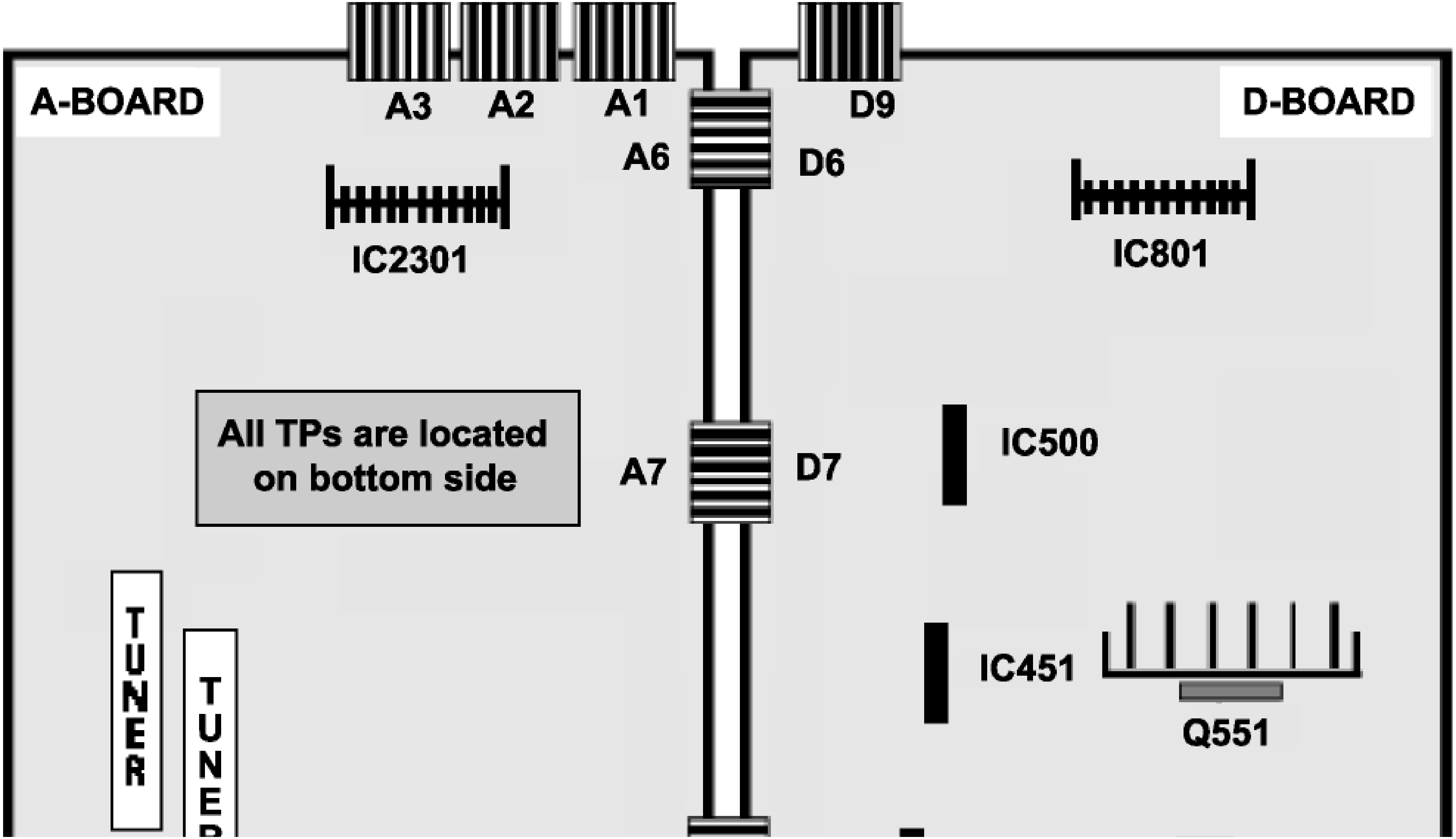

(4) SCREWS
(1) SCREW
SCREWS ON A/V BRACKET
(1) SCREW
(1) SCREW

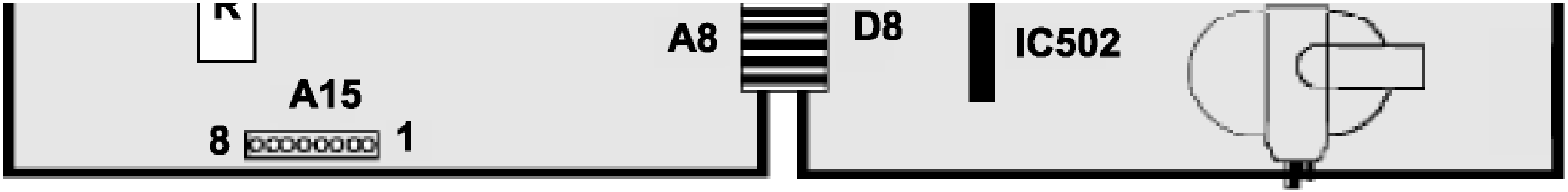
TOP PREVIOUS NEXT

# 12 Chassis service adjustment procedures

TOP PREVIOUS NEXT

All service adjustments are factory preset and should not require change unless controls and/or associated components are replaced.


A-BOARD
A3
A2
A1
A6
IC2301
All TPs are located on bottom side
A7
TUNER
TUNER
D9
D-BOARD
D6
IC801
D7
IC500
IC451
Q551



### 140.0_V B+ voltage check

1. Set the BRIGHT and PICTURE to minimum by using the PICTURE menu.
2. Connect the DVM on TPD50 (D-Board by and cold ground
3. Confirm that B+ voltage is 142V ± 6.0V. This voltage supplies B+ to the horizontal output and flyback circuits.

### Source voltage chart

120V AC line input. Set the BRIGHT and the PICTURE to minimum by using the PICTURE menu. Use cold or hot ground for the (-) lead of the DVM as needed

| A-BOARD | VOLTAGE |
|---|---|
| STBY 7V (BY IC2201) A-Board TPA9 | 7.5 ± 0.75V |
| MAIN 9V (BY IC006) A-Board TPA90 | 9.0V ± 0.5V |
| MAIN 5V (BY IC2301) A-Board TPA15 | 5.2V ± 0.3V |
| GC 2.5V (BY IC2856) A-Board TPA25 | 2.6V ± 0.2 |
| STBY 3.3V (BY A13 CONNECTOR) A-Board TPA16 | 3.3V ± 0.2V |
| MAIN 3.3V (BY A21 CONNECTOR) A-Board TPA33 | 3.3V ± 0.2V |
| MAIN 1.8V (BY IC2451) A-Board TPA18 | 1.8V ± 0.2V |

| D-BOARD | VOLTAGE |
|---|---|
| +B2 (BYD14 CONNECTOR) D-Board TPD50 | 142.0 ± 6.0V |
| 30V (BY IC807) D-Board TPD19 | 33.5 ± 2.0V |
| 15V (BY IC802) D-Board TPD7 | 14.5 +1.5V -1.0 |
| -15V (BY D9 CONNECTOR) D-Board TPD6 | -15.5V ± 1.5V |
| SOUND+ (BY D6 CONNECTOR) D-Board TPD4 | 17.2V +1.5V -1.0 |
| SOUND- (BY D6 CONNECTOR) D-Board TPD53 | -16.2V +1.5V -1.0 |
| 210V (BY IC805) D-Board TPD34 | 211.0V ± 4.0V |

| | |
|---|---|
| MAIN 12V (BY D16 CONNECTOR) D-Board TPD22 | 12V ± 0.5V |

## High voltage check

1. Select an active TV channel and confirm that horizontal is in sync.
2. Adjust BRIGHTNESS and PICTURE using PICTURE icon menu so video just disappears.
3. Confirm B+ 142 ± 6.0V is within limit.
4. Using a high voltage meter confirm that the high voltage is 31.0kV ± 0.3kV

TOP PREVIOUS NEXT

# 13 Purity and convergence procedure

TOP PREVIOUS NEXT

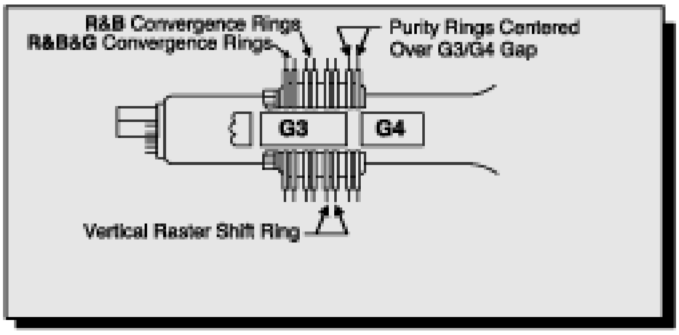
Adjustment is necessary only if the CRT or the deflection yoke is replaced or if the setting was disturbed. The complete procedure consists of:

1. Vertical raster shift adjustment.
2. Initial static convergence.
3. Setting the purity.
4. Final static convergence.

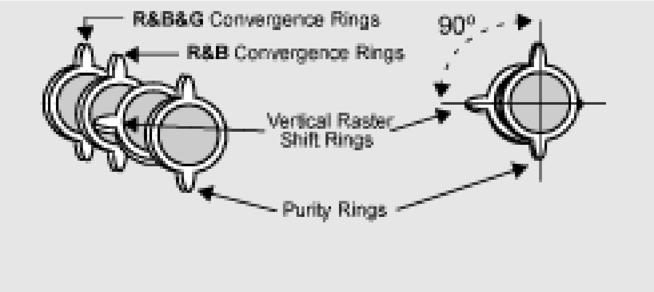
## When the CRT or the yoke is replaced

Place the yoke on the CRT neck (do not tighten the clamp). Place the vertical raster shift tabs at 3 o clock (90° from the purity and convergence tabs

Description of rings


R&B Convergence Rings
R&B&G Convergence Rings
Purity Rings Centered Over G3/G4 Gap
G3
G4
Vertical Raster Shift Ring

Initial position of rings


R&B&G Convergence Rings
R&B Convergence Rings
90°
Vertical Raster Shift Rings
Purity Rings

Turn the receiver ON. Operate the receiver for 60 minutes using the first purity check field (white screen) to stabilize the CRT.

Fully degauss the receiver by using an external degaussing coil.

Slide the deflection yoke back and forth on the neck of the CRT until it produces a near white, uniform raster.

## VERTICAL RASTER SHIFT ADJUSTMENT

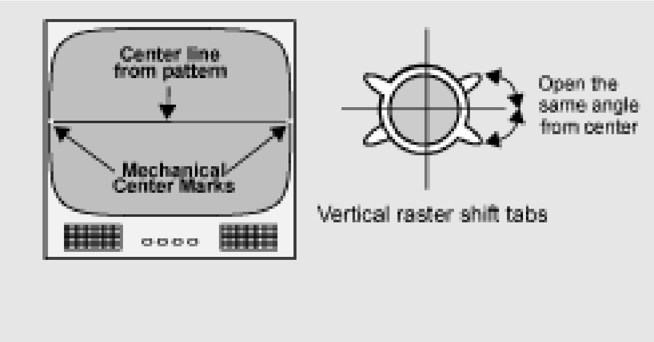
Apply a green pattern with a horizontal line, adjust the Deflection Yoke so that has no tilt, then secure it.

Adjust center line of the pattern with the mechanical center of the CRT, this center is determined by two marks at the side edges of the screen. To adjust the line, once the vertical raster shift tabs are place at 3 o clock to reduce itsmagnetic field effect open the tabs the same angle from the center, until the center line of the pattern becomes a straight line, centered with the marks of the CRT.

## IMPORTANT NOTICE

Rings come along with deflection yoke in one piece.

Vertical raster shift adjustment



## INITIAL CENTER STATIC CONVERGENCE

Connect a dot/cross hatch generator to the receiver and tune in a signal. Observe misconvergence at center of the screen only.

Adjust the R&B pole magnets; by separating tabs and rotating to converge blue with red.

Adjust the R&B and R&B&G pole magnets: by separating tabs and rotating to converge blue and red (magenta) with green.

## NOTE

Precise convergence at this point is not important.

## PURITY ADJUSTMENT

When the receiver is in the serviceman mode for making electronic adjustments, press the RECALL button on the remote control to enter purity check. (See the service adjustments electronic controls procedure).

Operate the receiver for 60 minutes using the first purity check field (white screen) to stabilize the CRT.

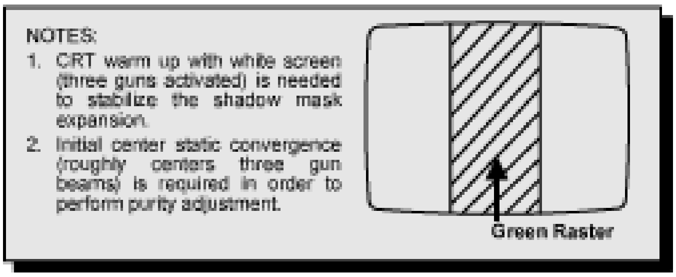
Fully degauss the receiver by using an external degaussing coil

Press the RECALL button on the remote control again until the purity check (green screen) appears.

Loosen the deflection yoke clamp screw and move the deflection yoke back as close to the purity magnet as possible.

Adjust the purity rings to set the vertical green raster precisely at the center of the screen

Green raster adjustment



NOTES:

1. CRT warm up with white screen (three guns activated) is needed to stabilize the shadow mask expansion.
2. Initial center static convergence (roughly centers three gun beams) is required in order to perform purity adjustment.

Slowly move the deflection yoke forward until the best overall green screen is displayed.

Tighten the deflection yoke clamp screw.

Press the RECALL button on the remote control again until the purity check blue and red screens appear and observe that good purity is obtained on each respective field.

Press the RECALL button on the remote control again until purity check (white screen) appears. Observe the screen for uniform white. If purity has not been achieved, repeat the above procedure.

## FINAL CONVERGENCE PROCEDURE

### NOTE

Vertical size and focus adjustments must be completed prior to performing the convergence adjustment. Connect a dot pattern generator to the receiver. The brightness level should not be higher than necessary to obtain a clear pattern.

Converge the red and the blue dots at the center of the screen by rotating the R&B pole static convergence magnets.

Align the converged red/blue dots with the green dots at the center of the screen by rotating the R&B&G pole static convergence magnets. Melt wax with soldering iron to fix the magnets.

Slightly tilt vertically and horizontally (do not rotate) the deflection yoke to obtain a good overall convergence.

If convergence is not reached at the edges, insert permalloy in the DY corners to achieve proper convergence. Recheck for purity and readjust if necessary.

After vertical adjustment of the yoke, insert wedge at 11 o clock position, then make the horizontal tilt adjustment.

Secure the deflection yoke by inserting four side wedges.

Apply adhesive between tab (thin portion) of wedge and CRT and place tape over the tab to secure to the CRT.

13.1 DYNAMIC CONVERGENCE ADJUSTMENT

13.2 Permalloy convergence corrector strip (Part No. 0FMK014ZZ)

13.3 DAF adjustment (Dynamic focus adjustment)

TOP PREVIOUS NEXT

# 13.1 DYNAMIC CONVERGENCE ADJUSTMENT

TOP PREVIOUS NEXT

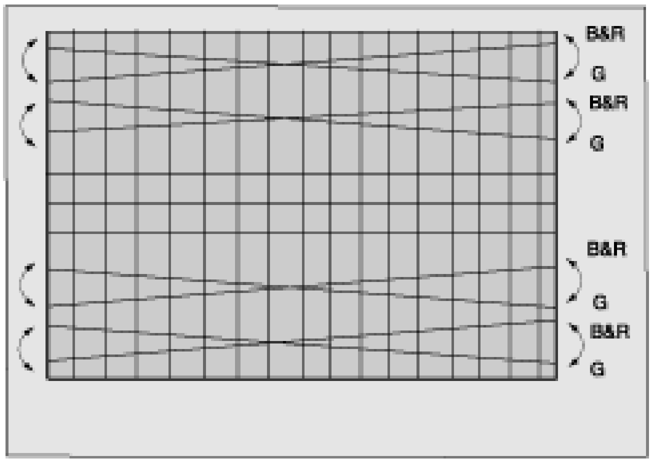
Use this for a precisely overall convergence adjust at the edges.

### DY(YHC, YV, XV) ADJUSTMENT

### YV ADJUSTMENT
### (VR1 FOR HORIZONTAL DYNAMIC CONVERGENCE)

1. Apply a crosshatch pattern.
2. Adjust contrast and brightness customer controls to obtain a correct picture.
3. With a driver adjust VR1 (located in deflection yoke board to obtain a proper corvergence at top and bottom of the screen

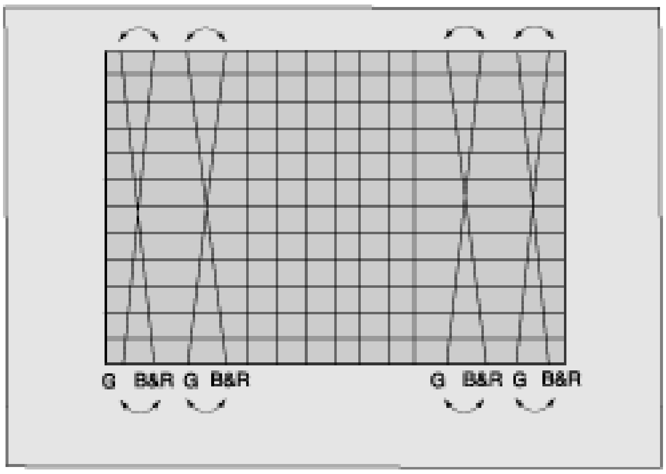
VR1 adjustment (YV)



### YH Adjustment
### (VR2 for vertical dynamic convergence)

1. Apply a crosshatch pattern.
2. Adjust contrast and brightness customer controls to obtain a correct picture.
3. With a driver Adjust VR2 (located in deflection yoke board to obtain a proper corvergence at left and right side of the screen.

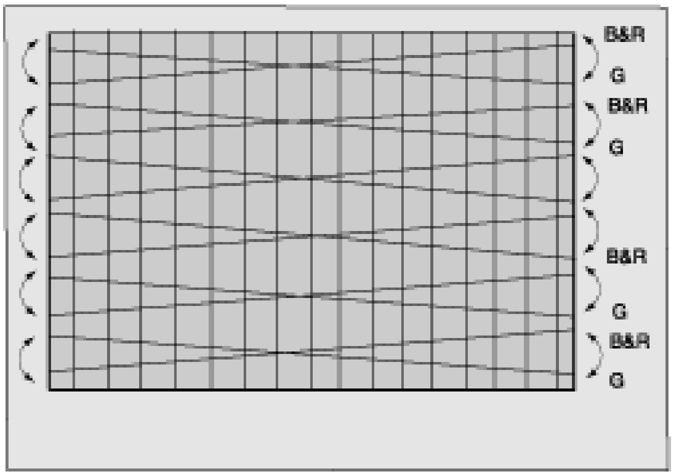
VR2 adjustment (YH)



## XV Adjustment (precise adjustment)

1. Apply a crosshatch pattern.
2. Adjust contrast and brightness customer controls to obtain a correct picture.
3. With a driver adjust the coil located in deflection yoke board to obtain a proper convergence horizontally.

Coil adjustment (Xv)



NOTE

Apply a red pattern and confirm purity, if purity is poor, repeat purity adjustments.

TOP PREVIOUS NEXT

# 13.2 Permalloy convergence corrector strip (Part No. 0FMK014ZZ)

TOP PREVIOUS NEXT

This strip is used in some sets to match the yoke and CRT for optimum convergence. If the yoke or CRT is replaced, the strip may not be required.

First converge the set without the strip and observe the corners.

First converge the set without the strip and observe the corners.

If correction is needed:

1. Place strip between CRT and yoke, in quadrant needing correction. Slowly move it around for desired results.
2. Press adhesive tightly to the CRT and secure with tape.

TOP PREVIOUS NEXT

# 13.3 DAF adjustment (Dynamic focus adjustment)

TOP PREVIOUS NEXT

The purpose of this adjustment is to move the focus in the picture, so the focus is in balance in the whole picture (same level). Perform this adjustment as a visual adjustment, centering both waveforms, repeat adjustment until best adjustment isobtained.

PREPARATION

1. Picture settings normalized.
2. Picture mode set to VIVID.

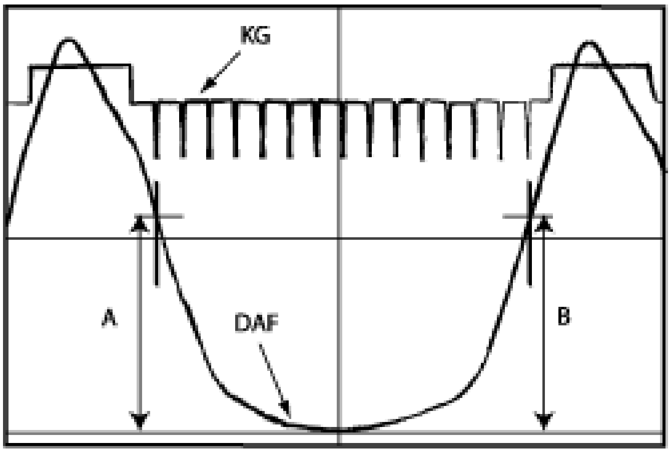
PREPARATION

1. Apply a crosshatch pattern.
2. Connect channel one of the oscilloscope with 100x1 probe to DAF OUT on J172 (D-Board).
3. Connect channel two of the oscilloscope with 10x1 probe to KG (L-Board).
4. If the the points A and B are different adjust, in service mode, adjust (HDAFS) DATA so that become the same position.
5. Apply a 1080i crosshatch pattern and repeat from step 1 to step 4.

   NOTE

   Both waveforms should be centered. Upper waveform could be different depending on the pattern applied

DAF adjustment



## Other method (DAF adjustment)

### PREPARATION

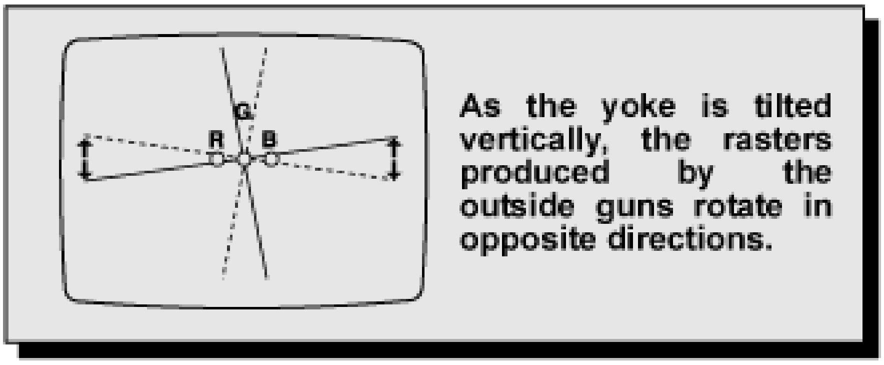
1. Picture settings normalized.
2. Picture mode set to VIVID.

### PROCEDURE

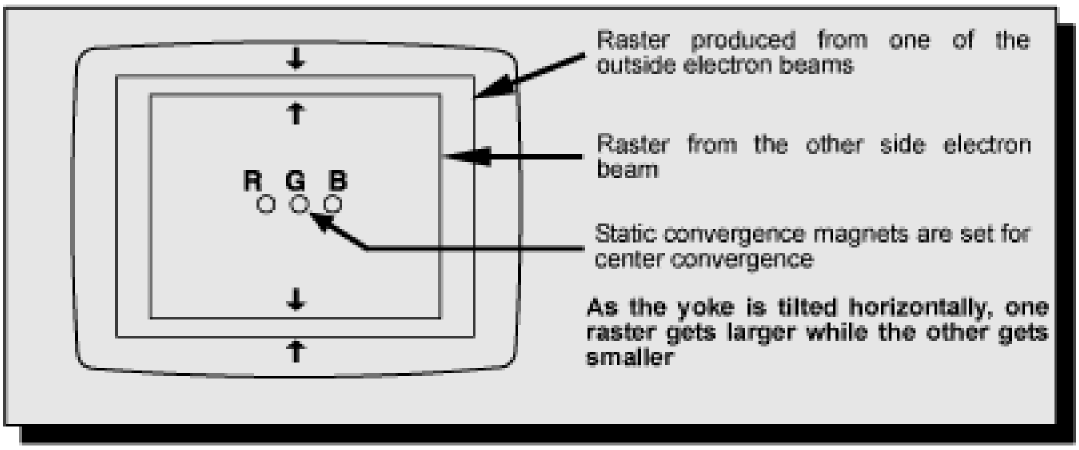
1. Apply a crosshatch pattern.
2. Put a mark in the focus control (on fly-back), so the control can be put back in the original position.
3. Turn the focus control (fly-back) fully, so the image is out focus.
4. Then in service mode adjust (HDAFS) DATA, so the focus is moving from side to side in the picture.
5. Adjust (HDAFS) DATA so the picture looks in balance in left and right.
6. Turn focus (fly-back) control back to its original position.
7. Apply a 1080i crosshatch pattern and repeat from step 1 to step 6.

   #### NOTE

   Repeat adjustment until best adjustment is obtained. For best adjustment, use oscilloscope as described in previous adjustment method.



As the yoke is tilted vertically, the rasters produced by the outside guns rotate in opposite directions.

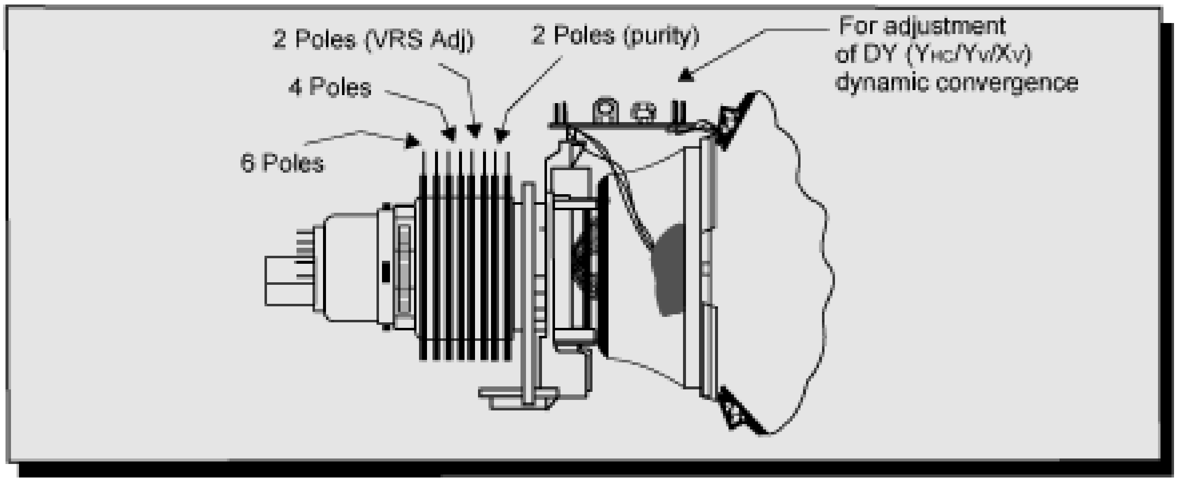


Raster produced from one of the outside electron beams

Raster from the other side electron beam

Static convergence magnets are set for center convergence

As the yoke is tilted horizontally, one raster gets larger while the other gets smaller



For adjustment of DY ($Y_{HC}/Y_V/X_V$) dynamic convergence

TOP PREVIOUS NEXT

# 14 Service mode (electronic adjustments)

TOP PREVIOUS NEXT

This receiver has electronic technology using the IC bus concept. It performs as a control function and it replaces many mechanical controls. Instead of adjusting mechanical controls individually, many of the control functions are now performed byusing  on screen display menu . (The service adjustment mode).

NOTE

It is suggested that the technician reads all the way through and understand the following procedure for entering/exiting the service adjustment mode; then proceed with the instructions working with the receiver. When becoming familiarwith the procedure, the flow chart for service mode may be used as a quick guide.

Quick entry to service mode

When minor adjustments need to be done to the electronic controls, the method of entering the service mode without removal of the cabinet back is as follows using the remote control:

1. Select SET-UP icon and select CABLE mode.
2. Select TIMER icon and set SLEEP time for 30 Min.
3. Exit menus.
4. Tune to the channel 124.
5. Adjust VOLUME to minimum (0).
6. Press VOL → (decrease) on receiver. Red  CHK  appears in upper corner.

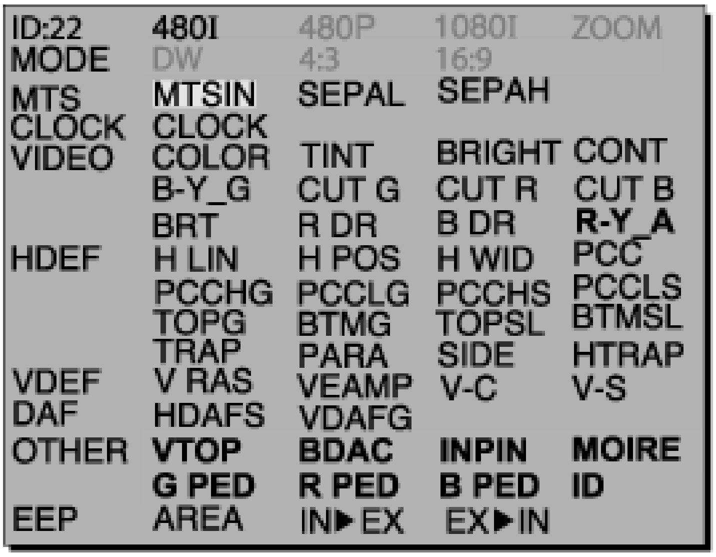
   NOTE

   After receiver is set into service mode, set TIMER back to NO.

   To toggle between aging and service modes:

   While the  CHK  is displayed on the left top corner of the CRT, pressing  ACTION  and  VOL on the TV simultaneously will toggle between the modes. Red CHK for serviceand yellow CHK for aging.

7. Press POWER on the remote control to display the service adjustment modes menu, select adjustment by pressing the volume right/left buttons and channel up/down buttons on the remote and ACTION to enter the adjustment.


ID:22 480I 480P 1080I ZOOM
MODE DW 4:3 16:9
MTS MTSIN SEPAL SEPAH
CLOCK CLOCK
VIDEO COLOR TINT BRIGHT CONT
B-Y_G CUT G CUT R CUT B
BRT R DR B DR R-Y_A
HDEF H LIN H POS H WID PCC
PCCHG PCCLG PCCHS PCCLS
TOPG BTMG TOPSL BTMSL
TRAP PARA SIDE HTRAP
VDEF V RAS VEAMP V-C V-S
DAF HDAFS VDAFG
OTHER VTOP BDAC INPIN MOIRE
G PED R PED B PED ID
EEP AREA IN▶EX EX▶IN

## NOTE

Some adjustments are available only in some modes (480i, 480p, 1080i); it is needed to apply the format. A 1080i, 480p, 480i pattern can be obtained from Panasonic s TU-DST51 set-top box DTV decoder.

## Exiting the service mode:

This TV goes out from service mode when it is unplugged or turned OFF. To exit the service mode, turn the TV OFF or unplug the TV from A.C.

## Other method

Press ACTION and POWER on the receiver simultaneously for at least 2 seconds.

The receiver momentarily shuts off; then comes back on tuned to channel 3 with a preset level of sound.

Any programmed channels, channels caption data and some others user defined settings will be erased when exited by pressing ACTION and POWER on receiver.

## IMPORTANT NOTE

Always check that the TV exits the service mode.

To confirm colors

When in service mode (red CHK is displayed) press RECALL on the remote control to enter the purity field check mode

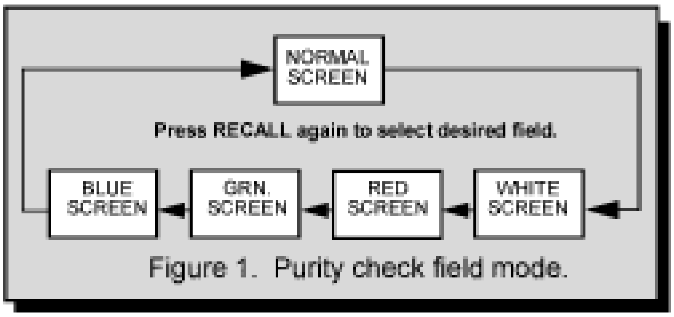

NORMAL SCREEN
Press RECALL again to select desired field.
BLUE SCREEN
GRN. SCREEN
RED SCREEN
WHITE SCREEN

Figure 1. Purity check field mode.

Entering service mode (open-back method)

While the receiver is connected and operating in normal mode, momentarily short test point FA1 (A15 pin 2) to cold ground (A-Board).

The receiver enters the aging mode.

Yellow letters CHK appear in the upper left corner of the screen.
(The volume right/left and channel up/down will adjust rapidly).

14.1 Service adjustment default values for service items

14.2 Instructional flow chart for service mode

TOP PREVIOUS NEXT

# 14.1 Service adjustment default values for service items

TOP PREVIOUS NEXT

| REGISTER | DESCRIPTION | FORMAT | | |
|---|---|---|---|---|
| | | NTSC | 1080i (16:9) | 1080i (4:3) |
| MTSIN | INPUT LEVEL | 21 | N/A | N/A |
| SEPAL | LOW LEVEL SEPARATION | 06 | N/A | N/A |
| SEPAH | HIGH LEVEL SEPARATION | 19 | N/A | N/A |
| CLOCK | CLOCK | 128 | N/A | N/A |
| COLOR | COLOR | 20 | 20 | N/A |
| TINT | TINT | 80 | 80 | N/A |
| BRIGH | SUB-BRIGHTNESS | 09 A0 | 09 A0 | N/A |
| CONT | SUB-CONTRAST | 02 A0 | 02 A0 | N/A |
| B-Y_G | MAGENTA TINT ADJ | 3D | 3C | N/A |
| CUT G | GREEN CUT-OFF | 02 16 | 02 16 | N/A |
| CUT R | RED CUT-OFF | 02 72 | 02 72 | N/A |
| CUT B | BLUE CUT-OFF | 01 EA | 01 EA | N/A |
| BRT | BRIGHT | 0A 34 | 0A 34 | N/A |
| R DR | RED DRIVE | 85 | 85 | N/A |
| B DR | BLUE DRIVE | 87 | 87 | N/A |
| R-Y_A | R-Y_A | 80 | 80 | N/A |
| HLIN | HORIZONTAL LINEARITY | 53 | 80 | N/A |
| HPOS | HORIZONTAL POSITIONING | 03 45 | 03 CE | N/A |
| HWID | HORIZONTAL WIDTH | B4 | 77 | N/A |
| PCC | PINCUSHION CORRECTION | 9B | B8 | B3 |
| PCCHG | PINCUSHION HIGH | 38 | 3E | 3E |
| PCCLG | PINCUSHION LOW | 39 | 3E | 3E |
| PCCHS | PINCUSHION HIGH | 05 | 05 | 05 |
| PCCLS | PINCUSHION LOW | 05 | 05 | 05 |
| TOPG | TOP CORNER PINCUSHION | 58 | 5A | 5A |
| BTMG | BOTTOM CORNER PINCUSHION | 58 | 57 | 57 |
| TOPSL | TOP CORNER PINCUSHION SLICE LEVEL | 03 | 03 | 03 |
| BTMSL | BOTTOM CORNER PINCUSHION SLICE LEVEL | 03 | 03 | 03 |
| TRAP | TRAPEZOID | 80 | 85 | 85 |
| PARA | PARALLELOGRAM | 10 | 10 | 10 |

| | | | | |
|---|---|---|---|---|
| SIDE | E-W PINCUSHION ADJUSTMENT | 16 | 15 | 15 |
| HTRAP | HORIZONTAL TRAPEZOID | 20 | 20 | 20 |
| VRAS | VERTICAL POSITION | 91 | AA | A2 |
| VEAMP | VERTICAL SIZE | 01 62 | 00 B0 | 01 A4 |
| V-C | VERTICAL LINEARITY | 6E | 78 | 78 |
| V-S | VERTICAL S CORRECTION | 56 | 56 | 56 |
| HDAFS | HORIZONTAL DAF PHASE | 00 A4 | 01 B4 | N/A |
| VTOP | VTOP | 00 D9 | 00 D1 | 00 FA |
| BDAC | BDAC | 73 | 77 | N/A |
| INPIN | INPIN | 20 | 20 | 20 |
| ID | ID | 22 | 22 | 22 |
| MOIRE | MOIRE | 80 | 80 | 80 |
| G PED | G PED | 80 | N/A | N/A |
| R PED | R PED | 80 | N/A | N/A |
| B PED | B PED | 80 | N/A | N/A |

NOTE:

The above table shows the default values for the service items, this values may vary depending on the serviced TV.

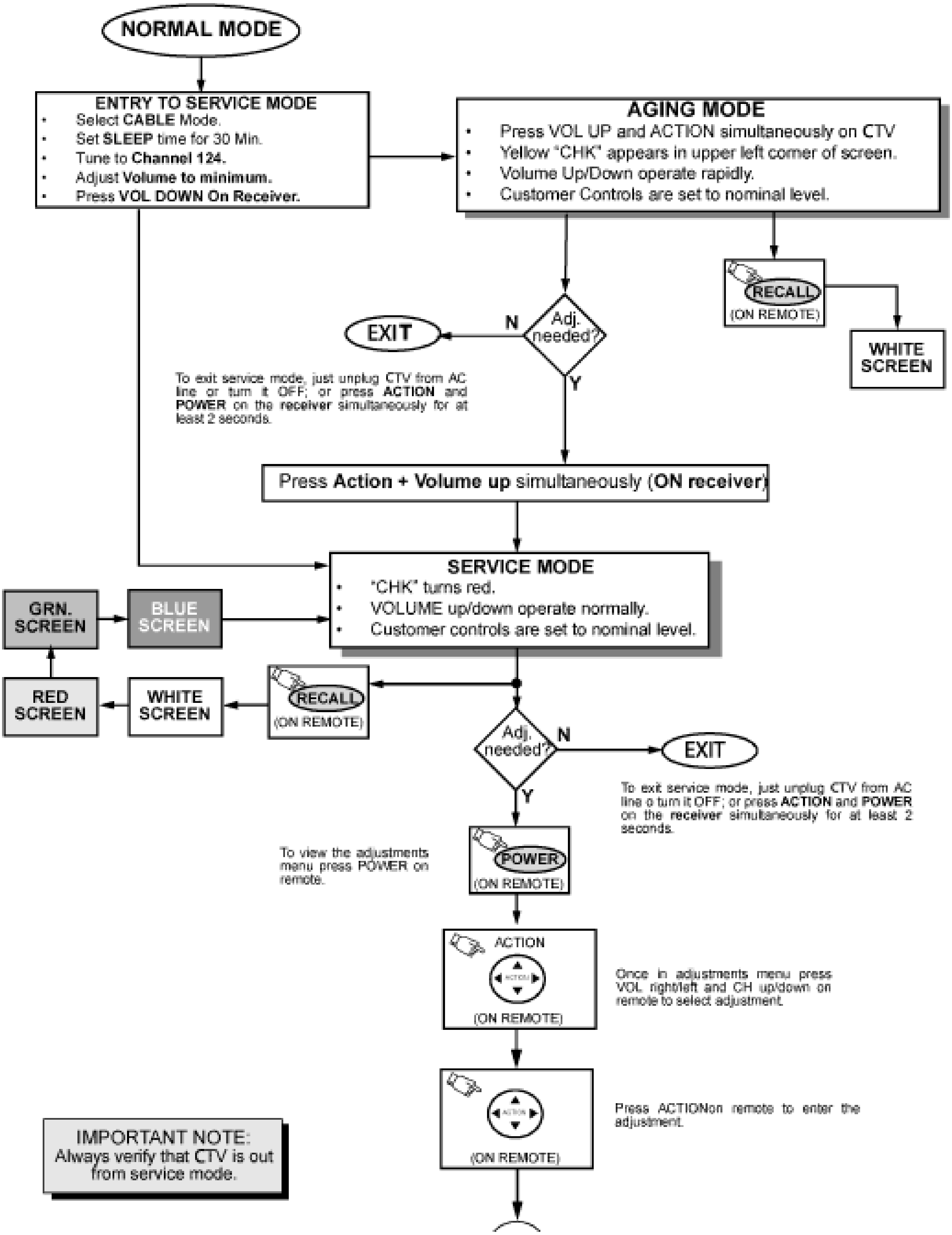
Important Note:

When changing ID register, message Unplug AC to activate will appear on the screen and the set mus be unplugged.

TOP PREVIOUS NEXT

# 14.2 Instructional flow chart for service mode

TOP PREVIOUS NEXT


NORMAL MODE
ENTRY TO SERVICE MODE
Select CABLE Mode.
Set SLEEP time for 30 Min.
Tune to Channel 124.
Adjust Volume to minimum.
Press VOL DOWN On Receiver.
AGING MODE
Press VOL UP and ACTION simultaneously on CTV
Yellow "CHK" appears in upper left corner of screen.
Volume Up/Down operate rapidly.
Customer Controls are set to nominal level.
RECALL
(ON REMOTE)
WHITE SCREEN
EXIT
N
Adj. needed?
Y
Press Action + Volume up simultaneously (ON receiver)
SERVICE MODE
"CHK" turns red.
VOLUME up/down operate normally.
Customer controls are set to nominal level.
GRN. SCREEN
BLUE SCREEN
RED SCREEN
WHITE SCREEN
RECALL
(ON REMOTE)
Adj. needed?
N
EXIT
Y
POWER
(ON REMOTE)
ACTION
(ON REMOTE)
(ON REMOTE)
IMPORTANT NOTE: Always verify that CTV is out from service mode.

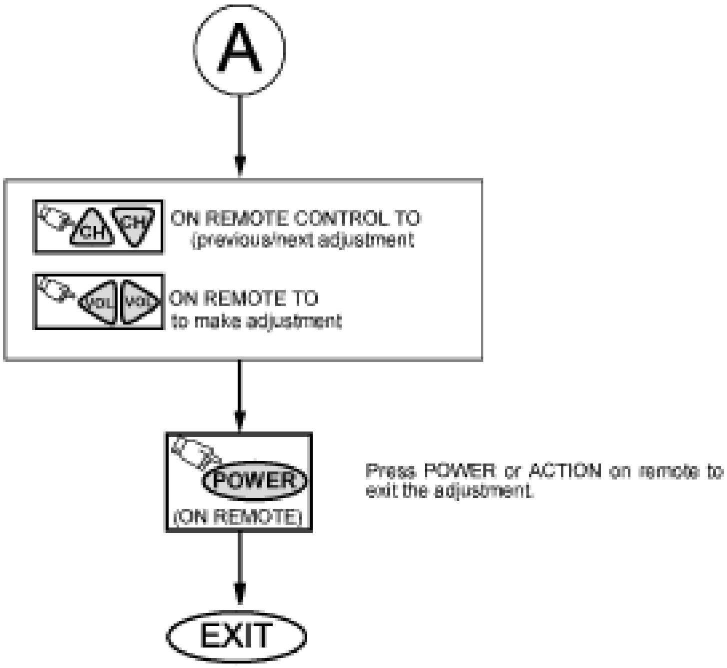
To exit service mode, just unplug CTV from AC line or turn it OFF; or press **ACTION** and **POWER** on the receiver simultaneously for at least 2 seconds.

To exit service mode, just unplug CTV from AC line o turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

To view the adjustments menu press POWER on remote.

Once in adjustments menu press VOL right/left and CH up/down on remote to select adjustment.

Press ACTIONon remote to enter the adjustment.


A
CH
CH
ON REMOTE CONTROL TO
(previous/next adjustment
VOL
VOL
ON REMOTE TO
to make adjustment
POWER
(ON REMOTE)
EXIT

Press POWER or ACTION on remote to exit the adjustment.

**IMPORTANT NOTE:**
Always verify that CTV is out from service mode.

To exit service mode, just unplug CTV from AC line or turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

TOP PREVIOUS NEXT

# 15 Service adjustments (electronic controls)

TOP PREVIOUS NEXT

NOTE

Please correlate with available pattern on all adjustments

15.1 (NTSC) Sub-Brightness Service DAC adjustment (BRIGHT)

15.2 (1080i) Sub-Brightness Service DAC adjustment (BRIGHT)

15.3 (NTSC) Sub-Contrast Service DAC adjustment (CUT-G, CONT)

15.4 (1080i) Sub-Contrast Service DAC adjustment (CUT-G, CONT)

15.5 (NTSC) Color output adjustment Service DAC adjustment (COLOR, TINT)

15.6 (NTSC) Color output adjustment Service DAC adjustment (COLOR, TINT, B-Y_G)

15.7 (1080i) Color output adjustment Service DAC adjustment (COLOR, TINT

15.8 Color temperature adjustment (B / W Tracking) Service DAC Adjust. (CUT R) (CUT G) (CUT B) (R DR) (B DR)

15.9 Deflection adjustments

15.9.1 (480i / 480p) H-Center adjustment

15.9.2 (480i / 480p) Vertical linearity(V-C), V-Size and V-Position adjustment

15.9.3 (480i / 480p) V-S, V-Size adjustment

15.9.4 (480i / 480p) Trapezoid adjustment

15.9.5 (480i / 480p) Parallelogram adjustment

15.9.6 (480i / 480p) E-W PCC balance adjustment

15.9.7 (480i / 480p) PCC adjustment

15.9.8 (480i / 480p) Corner PCC adjustment

15.9.9 (480i / 480p) H-Size adjustment

15.9.10 (480i / 480p 16:9 and 480i / 480p split) Vertical linearity(V-C) and V-Position adjustment

15.9.11 (480i / 480p 16:9 and 480i / 480p split) V-S, V-Size adjustment

15.9.12 (480i / 480p 16:9 and 480i / 480p split) H-Trapezoid adjustment

15.9.13 (480i / 480p 16:9 and 480i / 480p split) Trapezoid adjustment

15.9.14 (480i / 480p 16:9 and 480i / 480p split) E-W PCC adjustment

15.9.15 (480i / 480p 16:9 and 480i / 480p split) PCC adjustment

15.9.16 (480i / 480p 16:9 and 480i / 480p split) Corner PCC adjustment

15.9.17 1080i letter and split) H-Center adjustment

15.9.18 (1080i letter and split) Vertical linearity(V-C) and V-Position adjustment

15.9.19 (1080i letter and split) V-S, V-Size adjustment

15.9.20 (1080i letter and split) Trapezoid adjustment

15.9.21 (1080i letter and split) Parallelogram adjustment

15.9.22 (1080i letter and split) PCC adjustment

15.9.23 (1080i letter and split) Corner PCC adjustment

15.9.24 (1080i letter and split) E-W PCC adjustment

15.9.25 (1080i letter and split) H-Width adjustment

15.9.26 (1080i full) H-Size, V-SIZE adjustment

15.9.27 (1080i full) Vertical linearity(V-C) and V-Position adjustment

15.9.28 (1080i full) V-S, V-Size adjustment

15.9.29 (1080i full) Trapezoid adjustment

15.9.30 (1080i full) Parallelogram adjustment

15.9.31 (1080i full) E-W PCC adjustment

15.9.32 (1080i full) Corner PCC adjustment

15.10 MTS circuit adjustmens

15.11 Clock adjustment (CLOCK)

15.12 Service Adjustments Mechanical Controls

TOP PREVIOUS NEXT

# 15.1 (NTSC) Sub-Brightness Service DAC adjustment (BRIGHT)

TOP PREVIOUS NEXT

Adjustment of this control is important for setting proper operation of customer brightness and picture controls. Do not adjust the SCREEN VR after the sub-brightness is set.

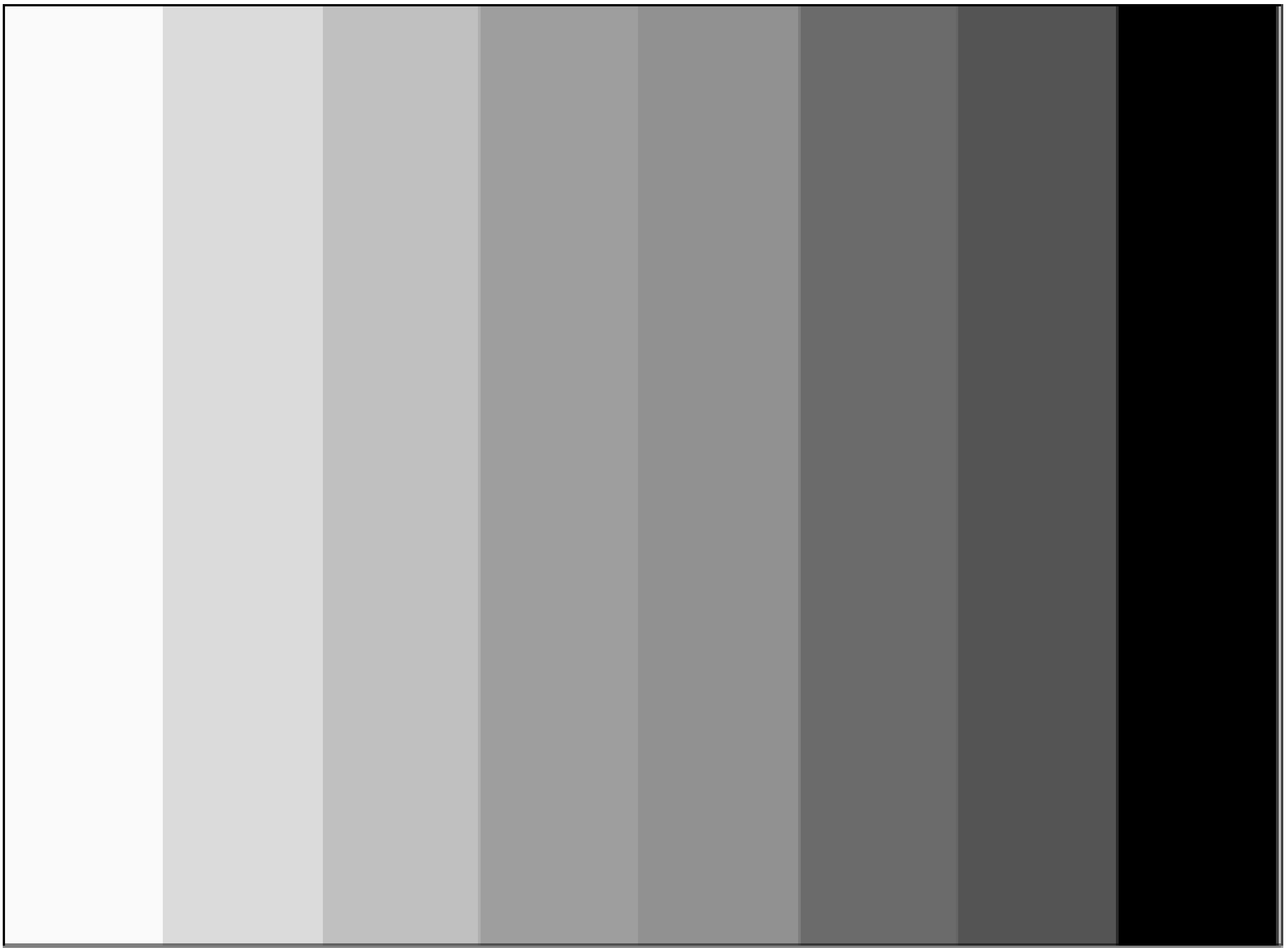
## Preparation

1. Normalize picture settings.
2. Picture mode set to VIVID.
3. Switch NATURAL COLOR to OFF.
4. Switch COLOR TEMPERATURE to COOL.

## Procedure

1. Apply a colorbar with no color pattern.
2. In the service mode for making electronic adjustments, select the DAC adjustment BRIGHT and adjust data so that 7.5IRE part is the same light output as the 3IRE part

Bars pattern



TOP PREVIOUS NEXT

# 15.2 (1080i) Sub-Brightness Service DAC adjustment (BRIGHT)

TOP PREVIOUS NEXT

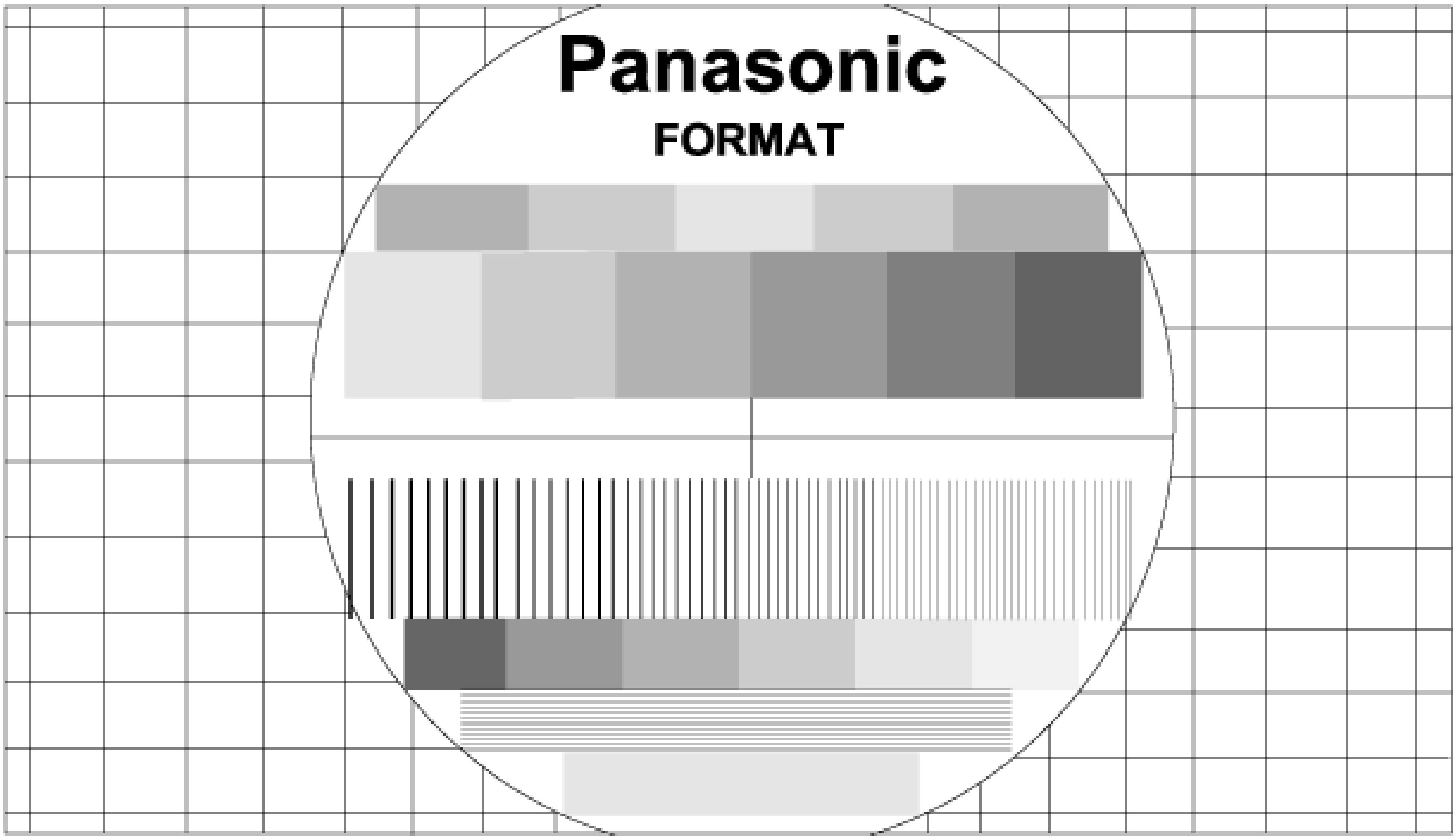
Adjustment of this control is important for setting proper operation of customer brightness and picture controls. Do not adjust the SCREEN VR after the sub-brightness is set.

## Preparation

1. Normalize picture settings.
2. Picture mode set to VIVID.
3. Switch NATURAL COLOR to OFF.
4. Switch COLOR TEMPERATURE to COOL.

## Procedure

1. Apply a colorbar with no color pattern.
2. In the service mode for making electronic adjustments, select the DAC adjustment BRIGHT and adjust data so that 7.5IRE part is the same light output as the 3IRE part


Panasonic
FORMAT

TOP PREVIOUS NEXT

# 15.3 (NTSC) Sub-Contrast Service DAC adjustment (CUT-G, CONT)

TOP PREVIOUS NEXT

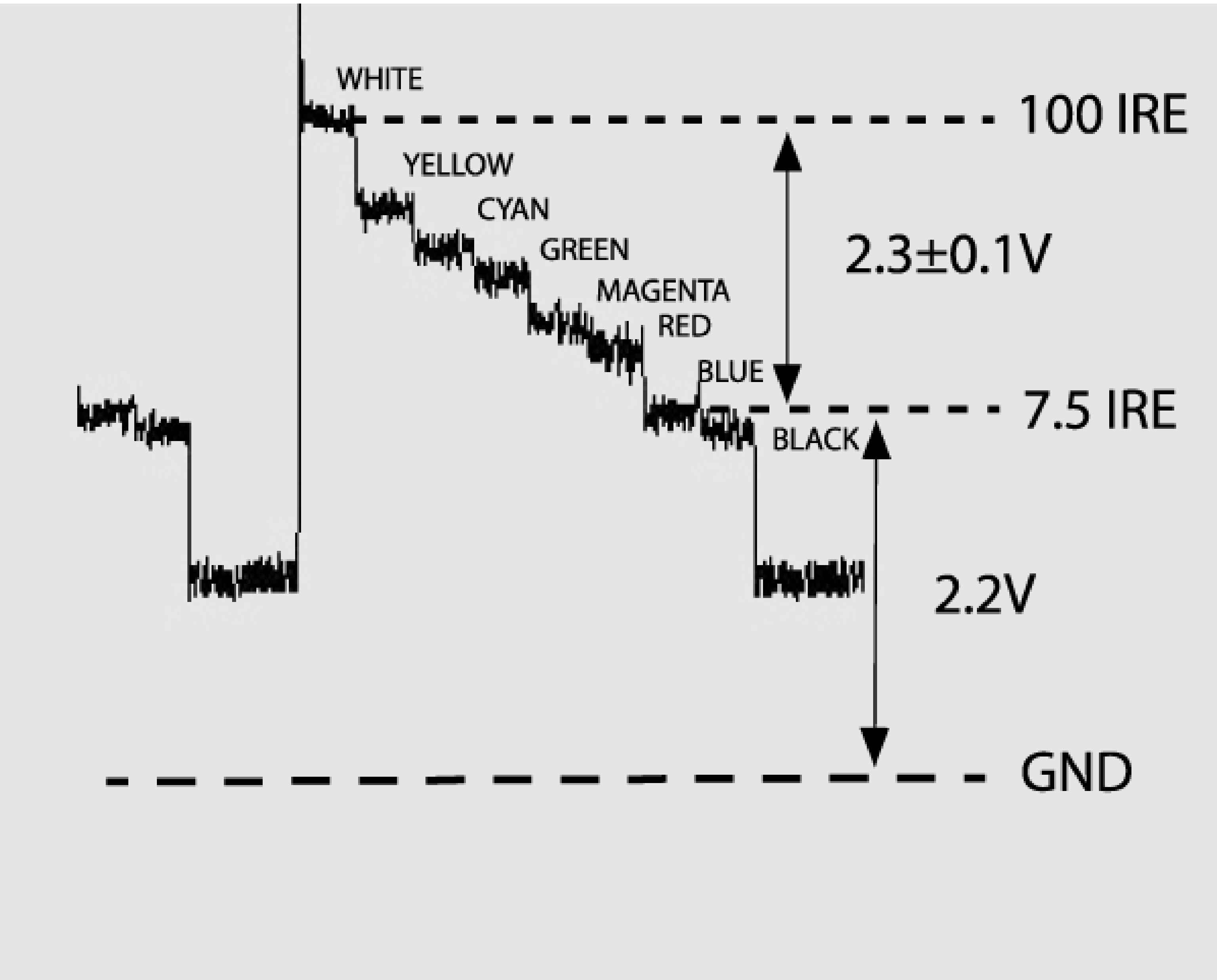
This adjustment is factory set. Do not adjust unless repairs are made to associated circuit, the CRT Board or when the CRT is replaced.

## Preparation

1. Apply a colorbar pattern.
2. Set the PICTURE settings to normal.
3. Set color to minimum (no color on picture).
4. Set PICTURE mode to VIVID
5. Connect the oscilloscope to TP47G.

## Procedure

1. In the service mode, select DAC for brightness adjustment  BRIGH  and set data to  1 D0 .
2. In service mode, select DAC for green cutoff adjustment  CUT-G , and adjust data to obtain 2.2 V between 7.5IRE and GND level at TP47G. (See waveform detail)
3. In service mode, select DAC for contrast adjustment  CONT , and adjust data to obtain 2.3±0.1V between 7.5IRE and 100IRE level at TP47G. (See waveform detail)



TOP PREVIOUS NEXT

# 15.4 (1080i) Sub-Contrast Service DAC adjustment (CUT-G, CONT)

TOP PREVIOUS NEXT

This adjustment is factory set. Do not adjust unless repairs are made to associated circuit, the CRT Board or when the CRT is replaced.

## PREPARATION

1. Apply a 1080i pattern (colorbar no color).
2. Set the PICTURE settings to normal.
3. Set PICTURE mode to VIVID
4. Connect the oscilloscope to TP47G.

## PROCEDURE

1. In the service mode, select DAC for brightness adjustment  BRIGH  to obtain 2.0V between 0 IRE and GND level at TP47G
2. In service mode, select DAC  CONT , and adjust data to obtain 2.5±0.1V between 0 IRE and 100 IRE level at TP47G

TOP PREVIOUS NEXT

# 15.5 (NTSC) Color output adjustment Service DAC adjustment (COLOR, TINT)

TOP PREVIOUS NEXT

NOTE

if a rainbow pattern generator is available perform the following procedure; the next section describes the procedure with no rainbow pattern.

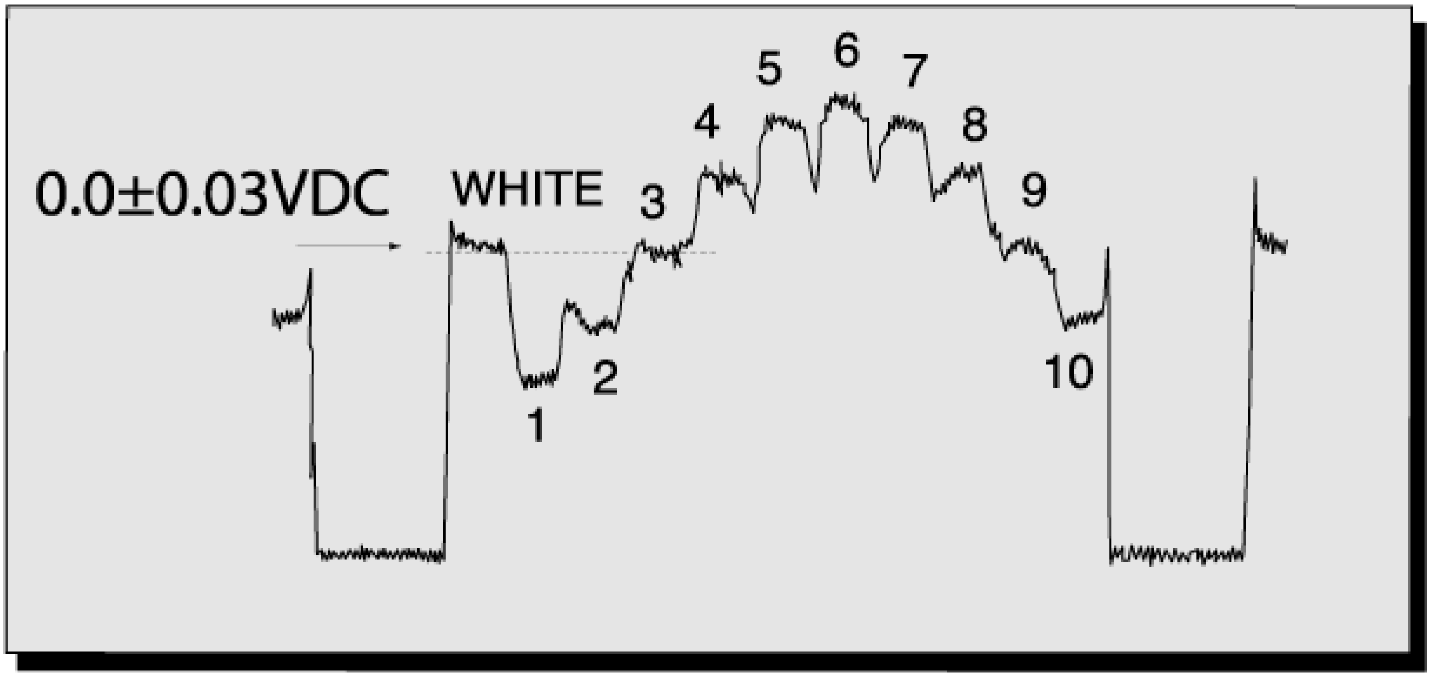
Make sure that sub-contrast adjustment was finished prior to perform this adjustment

PREPARATION

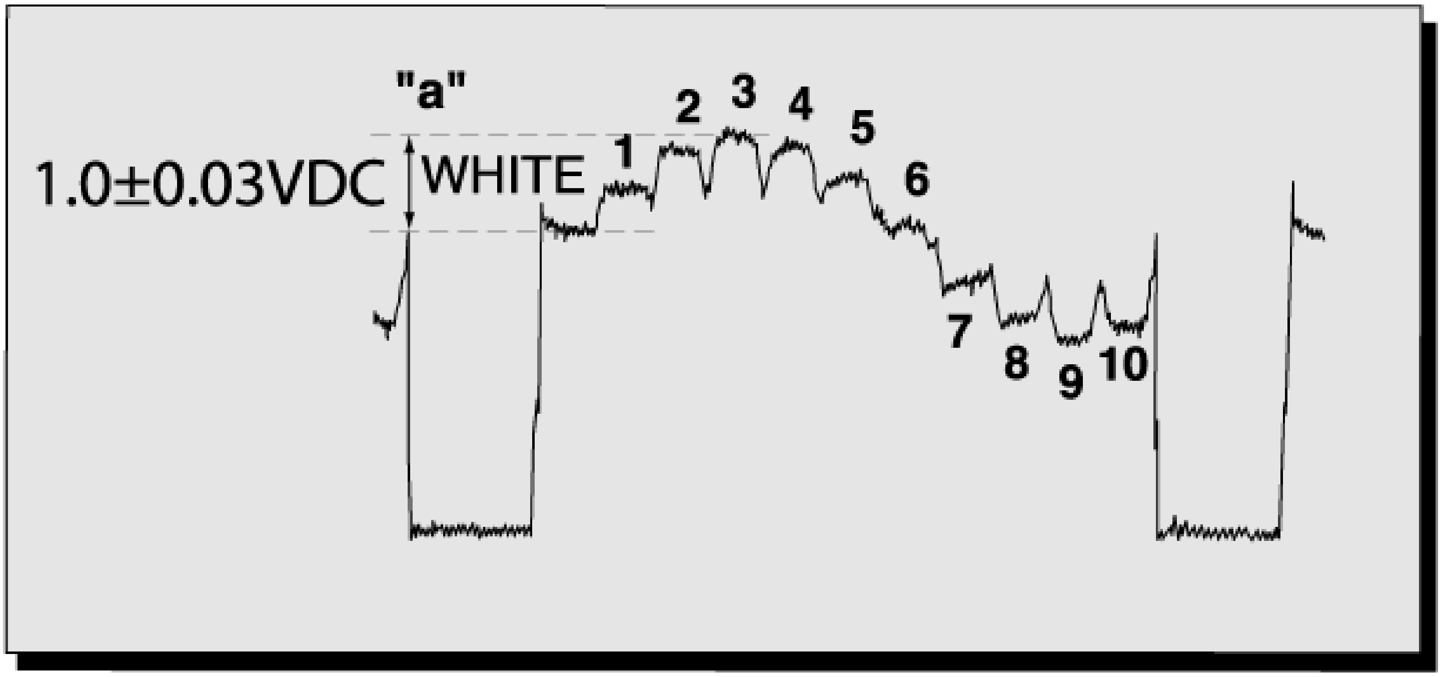
1. Normalize the picture settings.
2. Set picture mode to VIVID
3. Switch NATURAL COLOR to OFF.

PROCEDURE

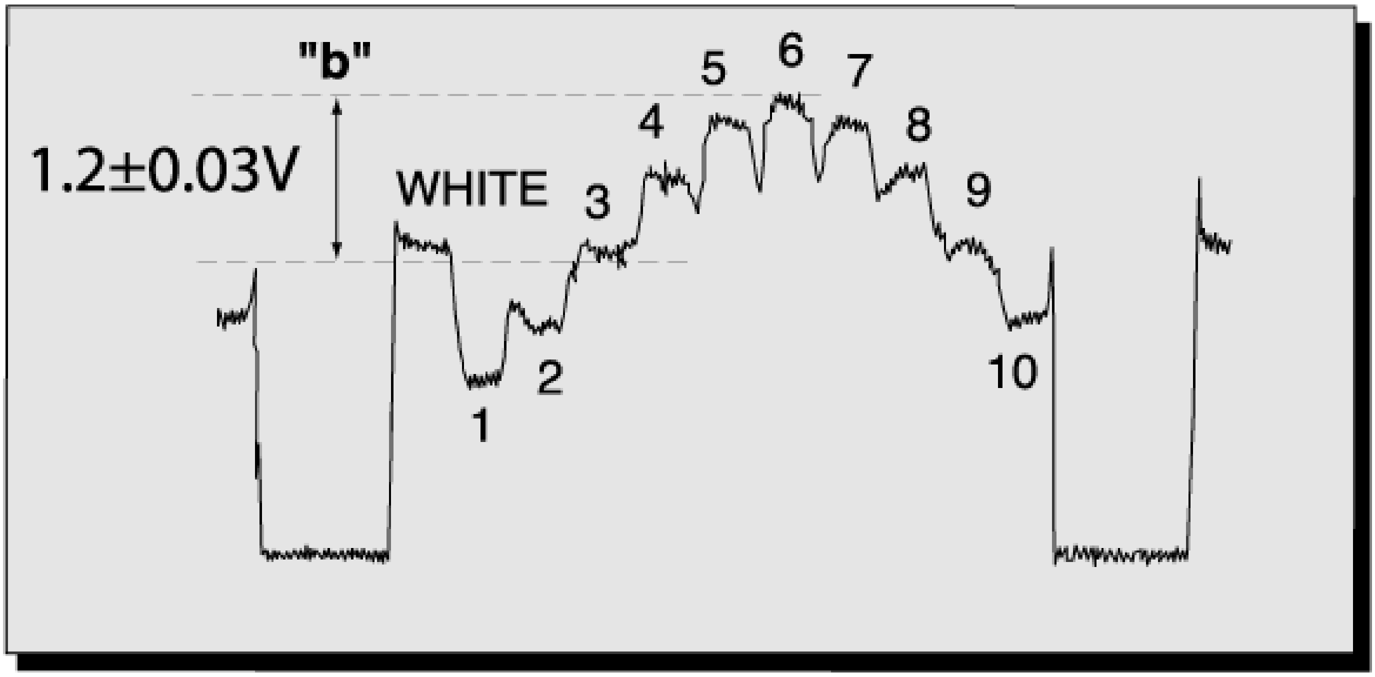
1. Apply a rainbow color bar pattern.
2. In service mode adjust R DR and B DR data to 80 .
3. Connect the oscilloscope to TP47B.
4. In service mode adjust TINT data so that the peak white is located at same level as peak 3 , within 0±0.03V. (See waveform detail)



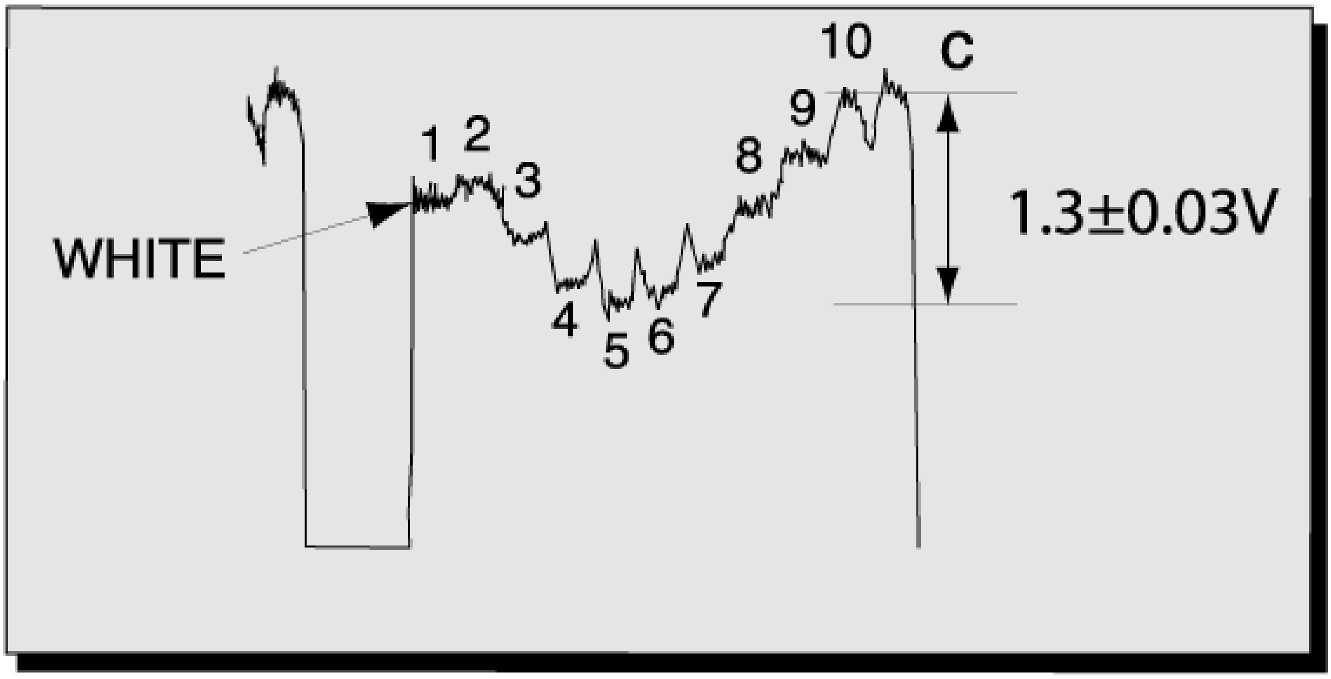
5. Connect the oscilloscope to TP47R.
6. In service mode adjust COLOR data so that the amplitude a is 1.0±0.03V.



7. Connect the oscilloscope to TP47B.
8. In service mode adjust B-Y G data so that the amplitude b is 1.2±0.03V (between 3rd and 6th peaks).



9. With oscilloscope still connected to TP47B, adjust TINT data so that the peak 9 is located at same level as peak 3 , within 0±0.03V, then increase TINT databy 9 steps.
10. Connect oscilloscope to TP47G.
11. In service mode adjust COLOR data so that the amplitude C is 0.92•0.02V.



12. Apply a studio color bar pattern and confirm that saturation and phase are normal (normal image).

TOP PREVIOUS NEXT

# 15.6 (NTSC) Color output adjustment Service DAC adjustment (COLOR, TINT, B-Y_G)

TOP PREVIOUS NEXT

## NOTE

Color and tint adjustment sets the reference settings for the user controls; It is important to read the procedures.

## (NO RAINBOW PATTERN)

Make sure that sub-contrast adjustment was finished prior to perform this adjustment

## PREPARATION

1. Normalize the picture settings.
2. Set picture mode to VIVID
3. Switch NATURAL COLOR to OFF.

## PROCEDURE

1. Apply a color bar pattern.
2. In service mode adjust  R DR  and  B DR  data to  80 .
3. In service mode adjust  TINT  data so that the color does not become greenish or redish.
4. In service mode adjust  COLOR  data so that the color level is not too high (saturated) or too low (tending to black and white).
5. In service mode adjust  B-Y G  data so that blue and green seem natural.
6. confirm that saturation and picture are normal (normal image).
7. If image is not satisfactory, repeat adjustment until the images is normal and natural

NOTE

The image can be compared against other set to see the image quality.

TOP PREVIOUS NEXT

# 15.7 (1080i) Color output adjustment Service DAC adjustment (COLOR, TINT

TOP PREVIOUS NEXT

Make sure that sub-contrast adjustment was finished prior to perform this adjustment

## PREPARATION

1. Normalize the picture settings.
2. Set picture mode to VIVID
3. Switch NATURAL COLOR to OFF.

## PROCEDURE

1. Apply a 1080i pattern or signal
2. In service mode adjust R DR and B DR data to 80 .
3. In service mode adjust TINT data so that the color does not become greenish or redish.
4. In service mode adjust COLOR data so that the color level is not too high (saturated) or too low (tending to black and white).
5. In service mode adjust B-Y G data so that blue and green seem natural.
6. confirm that saturation and picture are normal (normal image).
7. If image is not satisfactory, repeat adjustment until the image is normal and natural.

   NOTE

   The image can be compared against other set to see the image quality.

TOP PREVIOUS NEXT

# 15.8 Color temperature adjustment (B/W Tracking)
# Service DAC Adjust.
# (CUT R) (CUT G) (CUT B) (R DR) (B DR)

TOP PREVIOUS NEXT

Note:

Make sure that sub-contrast adjustment was done prior to this adjustment.

Minor Touch-Up Method

OBSERVE low and high brightness areas of a B/W picture for proper tracking. Adjust only as required for good gray scale and warm highlights .

1. LOW LIGHT areas - In service mode for making electronic adjustments, select CUT R, CUT G, CUT B and adjust the picture for gray.
2. HIGH LIGHT areas - In service mode for making electronic adjustments, select drive R DR, B DR and adjust the picture for warm whites.

Complete adjustment

PREPARATION

1. Turn the receiver ON and allow 30 minutes warm up at WHITE PATTERN.
2. Apply a color bar pattern (with no color).
3. Turn the SCREEN control (part of FBT T551) fully counterclockwise.
4. Preset the following service DACs for best results:
    - BRIGH________________________1 D0
    - CUT R________________________0 00
    - CUT B________________________0 00
    - R DR________________________80

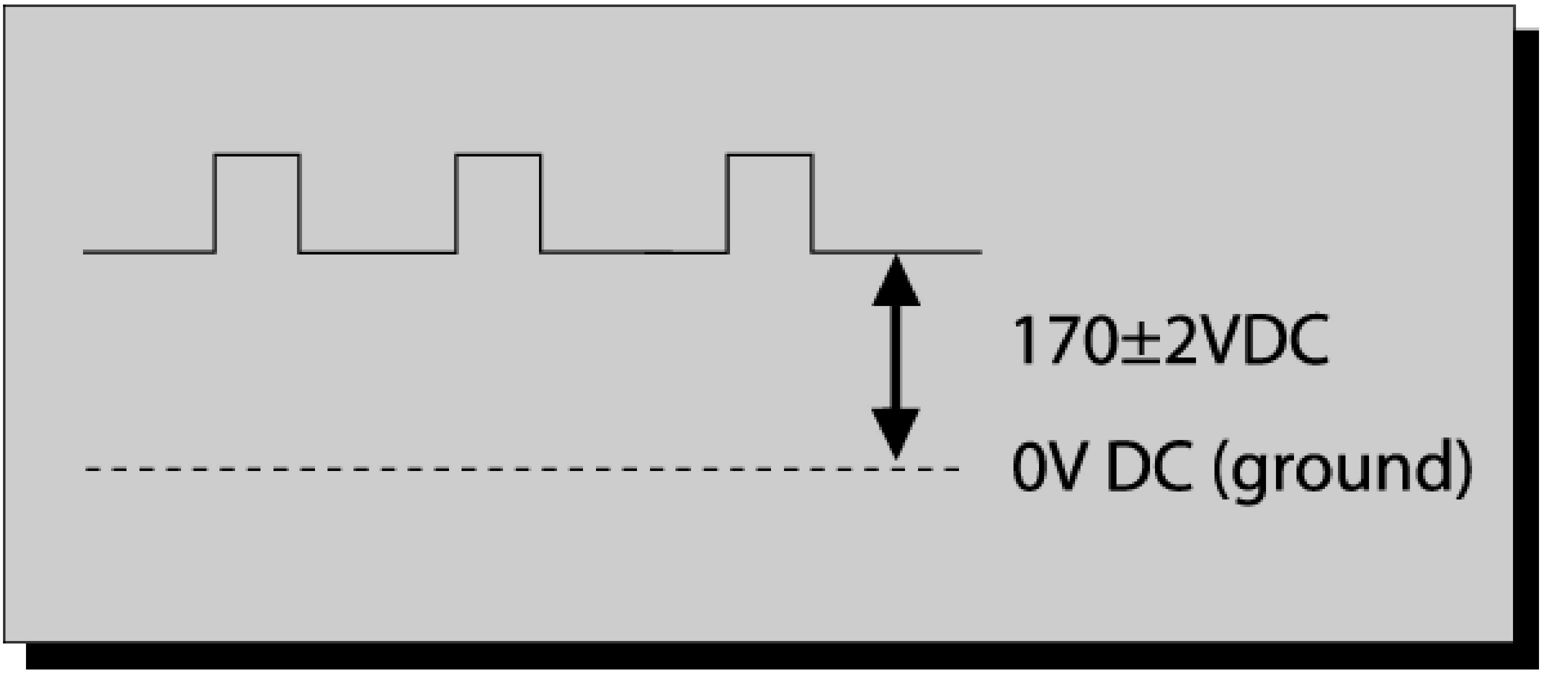
- B DR______________________80
- PICTURE SETTINGS__________NORMALIZED
- PICTURE MODE_____________VIVID

## PROCEDURE

1. Connect the oscilloscope to KG (CRT-Board).
2. In service mode for making electronic adjustment, select BRIGH DAC.
3. Press RECALL button on the remote control to collapse the raster. (service SW).
4. Connect oscilloscope to KG on L-Board and adjust service mode CUT-G DAC until 170±2V above DC ground is measured
5. Remove the probe from KG.
6. Turn screen clockwise slowly until color is slightly appeared.
7. Then adjust CUT R and CUT B until line becomes white.
8. Press RECALL button on the remote to restore the raster.
9. Adjust R DR and B DR so the white seems like white and black like black
10. Apply a normal signal and confirm that the image is normal and a good gray scale
11. If correction is needed perform minor touch-up method.

    ### NOTE

    This adjustment (NTSC) will adjust automatically 480p and 1080i formats, no need to adjust for these formats


170±2VDC
0V DC (ground)

TOP PREVIOUS NEXT

# 15.9 Deflection adjustments

TOP PREVIOUS NEXT

## To reset deflection adjustments

To reset deflection adjustments to factory adjusted default, enter to service mode (with red CHK displayed), press POWER button on remote to display the service menu, then press and hold RECALL button for at least three seconds, a reset messagewill appear in the image.

Use this feature when deflection adjustment gets off adjustment to the point that it cannot be adjusted back easily.

## NOTE

Deflection adjustment for 480i/480p, 480i/480p 16:9 and 480i/480p split, 1080i letter and split mode are provided differently.

15.9.1 (480i / 480p) H-Center adjustment

15.9.2 (480i / 480p) Vertical linearity(V-C), V-Size and V-Position adjustment

15.9.3 (480i / 480p) V-S, V-Size adjustment

15.9.4 (480i / 480p) Trapezoid adjustment

15.9.5 (480i / 480p) Parallelogram adjustment

15.9.6 (480i / 480p) E-W PCC balance adjustment

15.9.7 (480i / 480p) PCC adjustment

15.9.8 (480i / 480p) Corner PCC adjustment

15.9.9 (480i / 480p) H-Size adjustment

15.9.10 (480i / 480p 16:9 and 480i / 480p split) Vertical linearity(V-C) and V-Position adjustment

15.9.11 (480i / 480p 16:9 and 480i / 480p split) V-S, V-Size adjustment

15.9.12 (480i / 480p 16:9 and 480i / 480p split) H-Trapezoid adjustment

15.9.13 (480i / 480p 16:9 and 480i / 480p split) Trapezoid adjustment

15.9.14 (480i / 480p 16:9 and 480i / 480p split) E-W PCC adjustment

15.9.15 (480i / 480p 16:9 and 480i / 480p split) PCC adjustment

15.9.16 (480i / 480p 16:9 and 480i / 480p split) Corner PCC adjustment

15.9.17 1080i letter and split) H-Center adjustment

15.9.18 (1080i letter and split) Vertical linearity(V-C) and V-Position adjustment

15.9.19 (1080i letter and split) V-S, V-Size adjustment

15.9.20 (1080i letter and split) Trapezoid adjustment

15.9.21 (1080i letter and split) Parallelogram adjustment

15.9.22 (1080i letter and split) PCC adjustment

15.9.23 (1080i letter and split) Corner PCC adjustment

15.9.24 (1080i letter and split) E-W PCC adjustment

15.9.25 (1080i letter and split) H-Width adjustment

15.9.26 (1080i full) H-Size, V-SIZE adjustment

15.9.27 (1080i full) Vertical linearity(V-C) and V-Position adjustment

15.9.28 (1080i full) V-S, V-Size adjustment

15.9.29 (1080i full) Trapezoid adjustment

15.9.30 (1080i full) Parallelogram adjustment

15.9.31 (1080i full) E-W PCC adjustment

15.9.32 (1080i full) Corner PCC adjustment

TOP PREVIOUS NEXT

# 15.9.1 (480i/480p) H-Center adjustment

TOP PREVIOUS NEXT

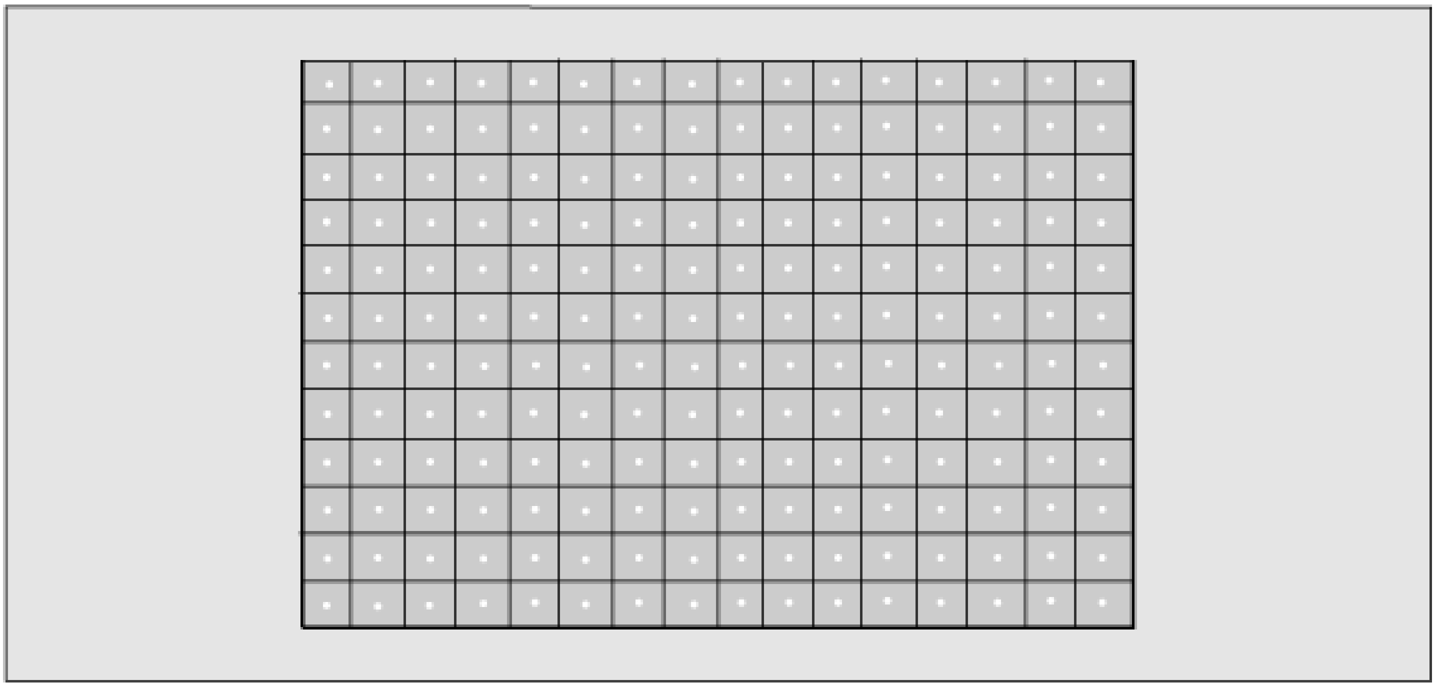
PREPARATION

1. Apply a crosshatch pattern.
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. If horizontal linearity is poor, in service mode, adjust data H LIN

H-Adjustment



2. Apply a pattern to center the picture.
3. If the horizontal center is not aligned, in service mode adjust H POS DATA to adjust the horizontal center of the monoscope pattern to the CRT center.

TOP PREVIOUS NEXT

# 15.9.2 (480i/480p) Vertical linearity(V-C), V-Size and V-Position adjustment

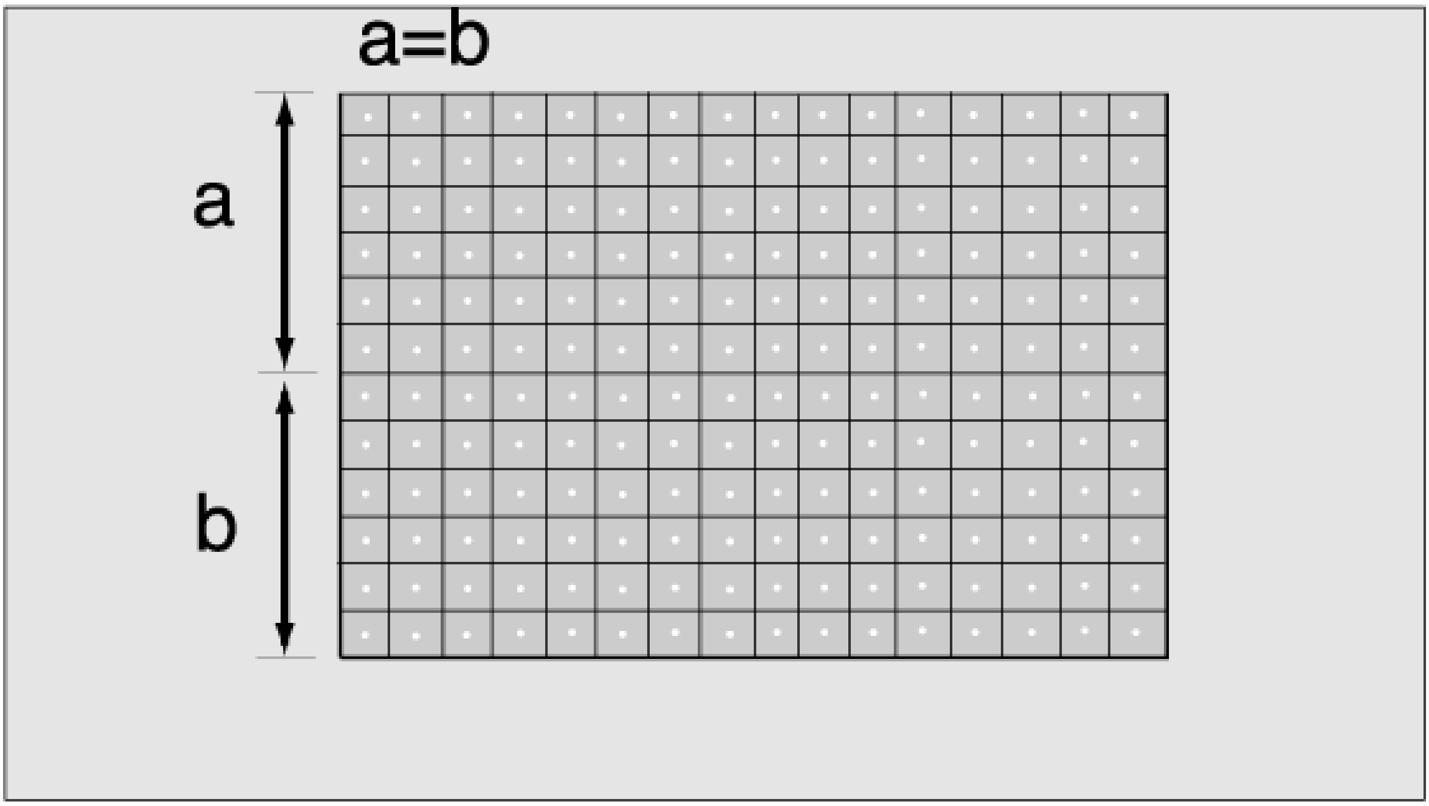
TOP PREVIOUS NEXT

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select DAC adjustment  
 V-RAS  and adjust crosshatch pattern to center vertical position to the CRT center.
2. Adjust linearity data  V-C  so that interval of  a  is same as  b  (a=b).



3. If the v-position is not at the CRT center, adjust  
V position  V RAS  DATA again.

4. Adjust H-TRAPEZOID data HTRAP so that the upper and lower lines becomes horizontal.

TOP PREVIOUS NEXT

# 15.9.3 (480i/480p)
# V-S, V-Size adjustment

TOP PREVIOUS NEXT

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

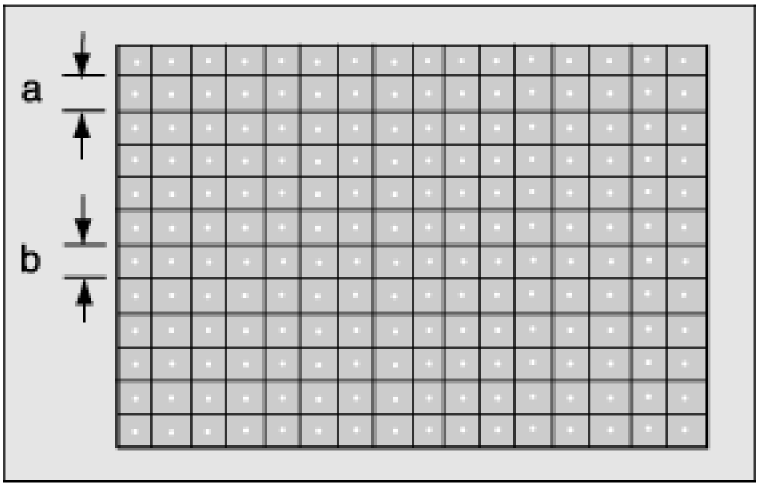
PROCEDURE

1. Enter to service mode
2. Check a and b sizes, If b-a < -1.5mm (in top & bottom extending case)
    - Increase V-S DATA by one step
    - Adjust VEAMP so that V-SIZE is regular size again.

      NOTE

      Repeat a and b until b-a ± 1.5mm
3. Confirm to make outermost circle of monoscope pattern a correct circle

V-Adjustment



TOP PREVIOUS NEXT

# 15.9.4 (480i/480p) Trapezoid adjustment

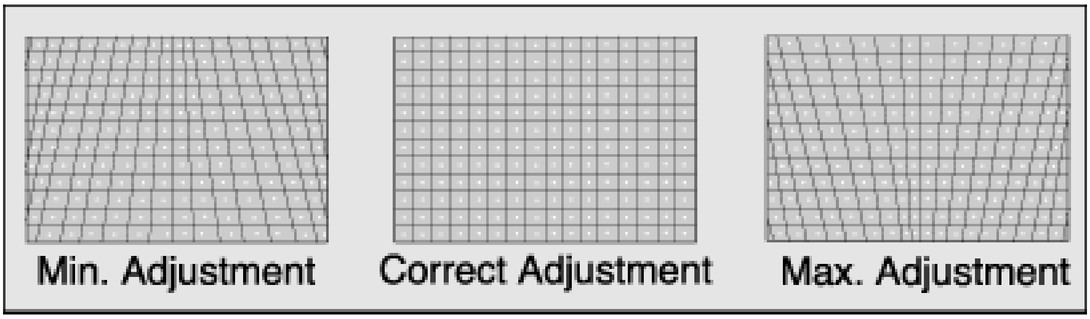
TOP PREVIOUS NEXT

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select TRAP and adjust DATA so that lines at right and left are vertical like a solid line


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.5 (480i/480p) Parallelogram adjustment

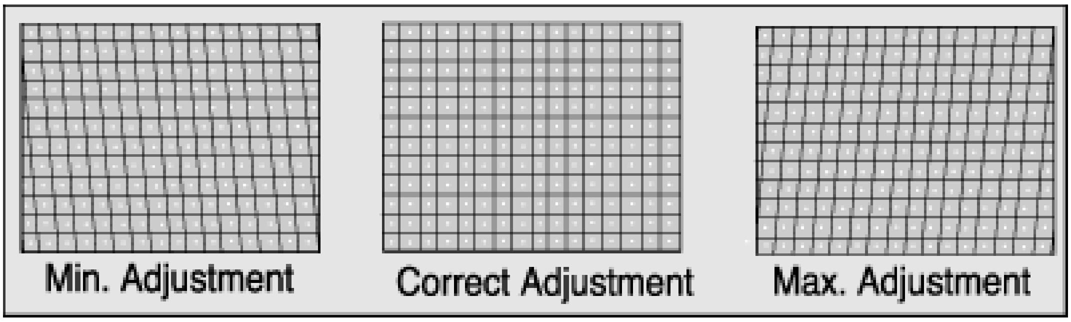
TOP PREVIOUS NEXT

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select PARA and adjust so that the lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.6 (480i/480p) E-W PCC balance adjustment

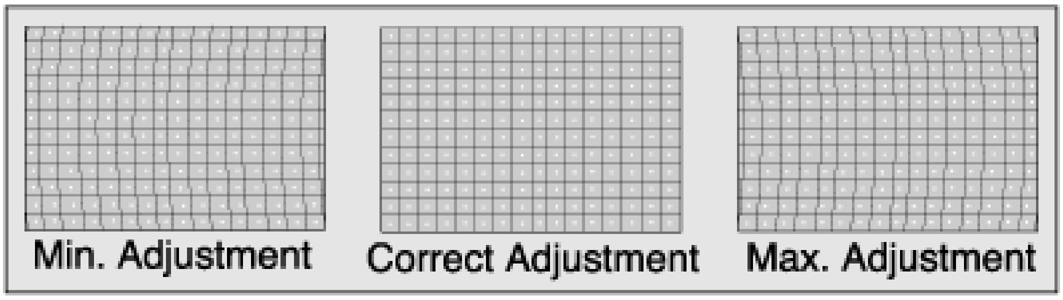
TOP PREVIOUS NEXT

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select SIDE and adjust so that lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.7 (480i/480p) PCC adjustment

TOP PREVIOUS NEXT

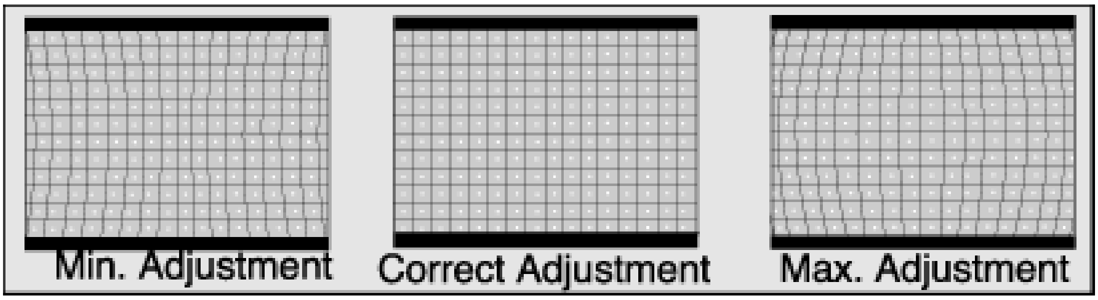
PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust PCC DATA so that the 1st line and 3rd line make a good balance

PCC adjustments



NOTE

If side and lower side is imbalanced, adjust PCCHG and PCCLG so that PCC make good balance.

TOP PREVIOUS NEXT

# 15.9.8 (480i/480p) Corner PCC adjustment

TOP PREVIOUS NEXT

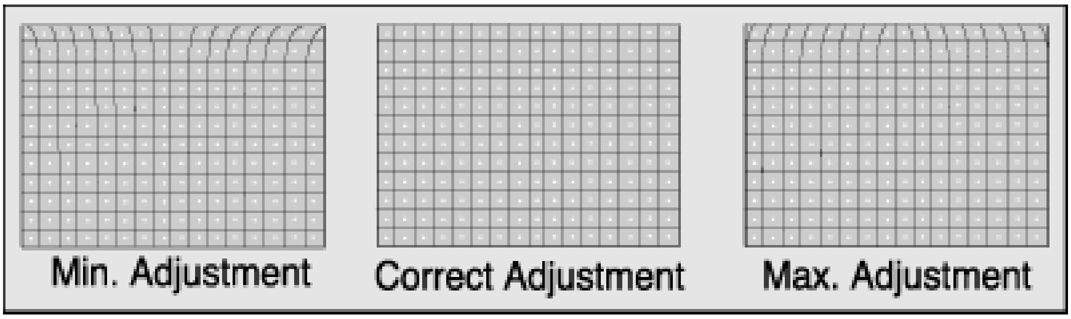
PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

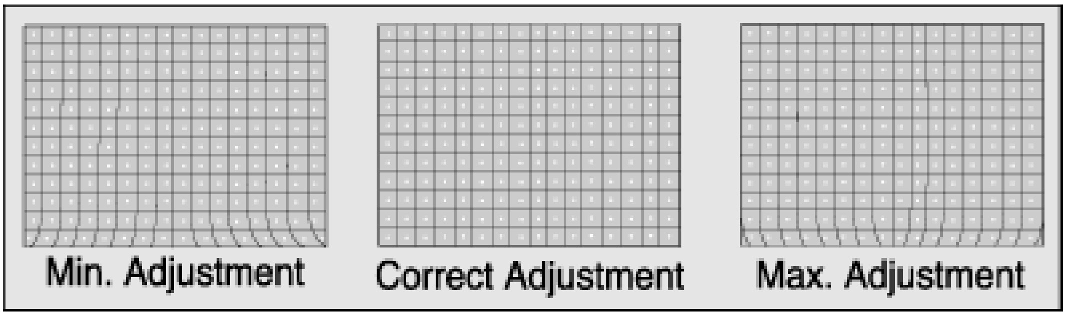
1. To adjust upper and lower linearity.
2. Adjust TOPG to straighten upper lines

Top adjustment


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. Adjust BTMG to straighten lower lines

Bottom adjustment


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If TOP-BOTTOM bending point is not so good, adjust TOPSL and BTMSL of slice level.

TOP PREVIOUS NEXT

# 15.9.9 (480i/480p) H-Size adjustment

TOP PREVIOUS NEXT

PREPARATION

1. Use a pattern that permits centering the image
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Adjust H WID DATA so that left width and right become in good balance (not too wide or narrow).

TOP PREVIOUS NEXT

# 15.9.10 (480i/480p 16:9 and 480i/480p split) Vertical linearity(V-C) and V-Position adjustment

TOP PREVIOUS NEXT

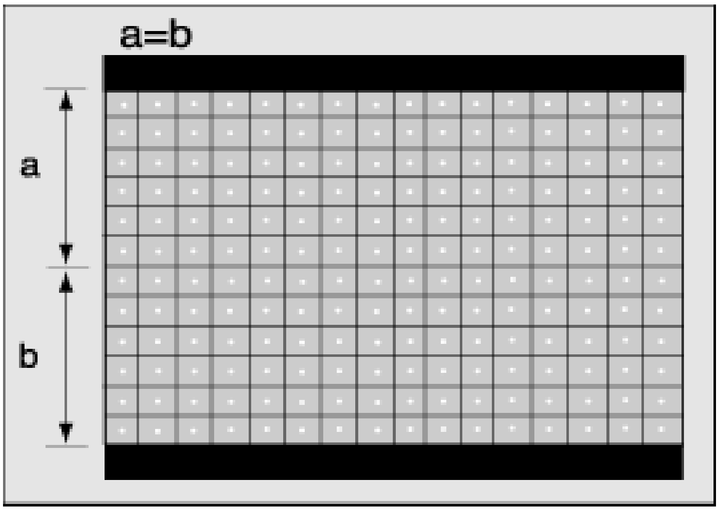
## PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

## PROCEDURE

1. Enter service mode, select DAC adjustment
   V-RAS and adjust crosshatch pattern to center vertical position to the CRT center.
2. Adjust linearity data V-C so that interval of a is same as b (a=b).

Linearity adjustment



TOP PREVIOUS NEXT

# 15.9.11 (480i/480p 16:9 and 480i/480p split) V-S, V-Size adjustment

TOP PREVIOUS NEXT

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

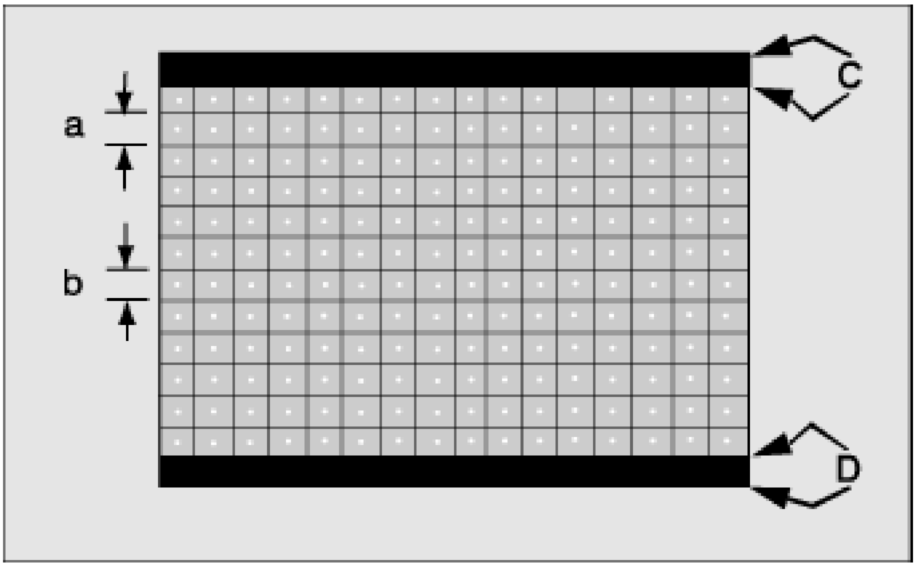
PROCEDURE

1. Enter to service mode
2. Adjust VAMP so that width C and D becomes 60mm
3. Check a and b sizes, If b-a < -1.5mm (in top and bottom extending case)
    - Increase V-S DATA by one step
    - Adjust VEAMP so that width C and D becomes 60mm for 32 and 70mm for 36 .

      NOTE

      Repeat until b-a ± 1.5mm

V-Adjustment



TOP PREVIOUS NEXT

# 15.9.12 (480i/480p 16:9 and 480i/480p split)
# H-Trapezoid adjustment

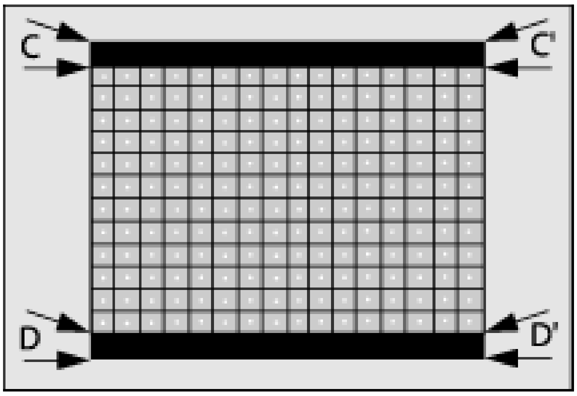
TOP PREVIOUS NEXT

## PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

## PROCEDURE

1. Enter service mode, select HTRAP and adjust DATA so that upper and lower edges become horizontal (c=c and d=d )



TOP PREVIOUS NEXT

# 15.9.13 (480i/480p 16:9 and 480i/480p split) Trapezoid adjustment

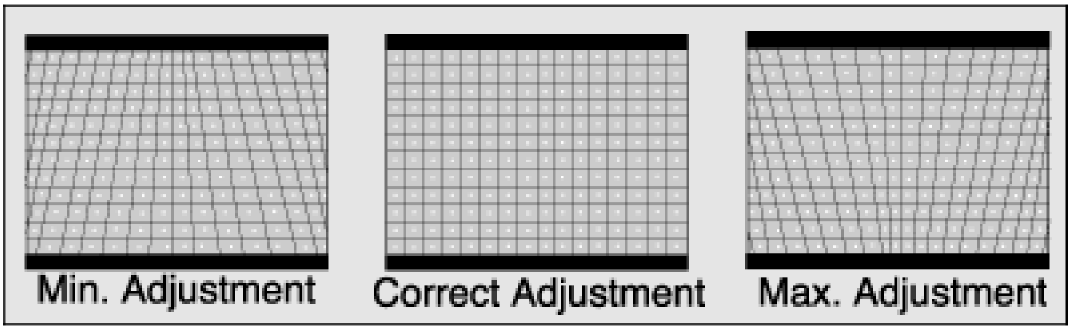
TOP PREVIOUS NEXT

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select TRAP and adjust DATA so that lines at right and left are vertical like a solid line


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.14 (480i/480p 16:9 and 480i/480p split)

# E-W PCC adjustment

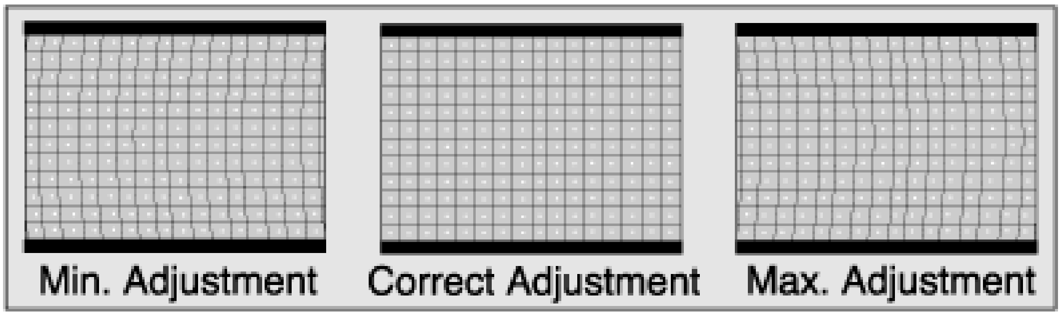
TOP PREVIOUS NEXT

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select SIDE and adjust so that lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.15 (480i/480p 16:9 and 480i/480p split)
# PCC adjustment

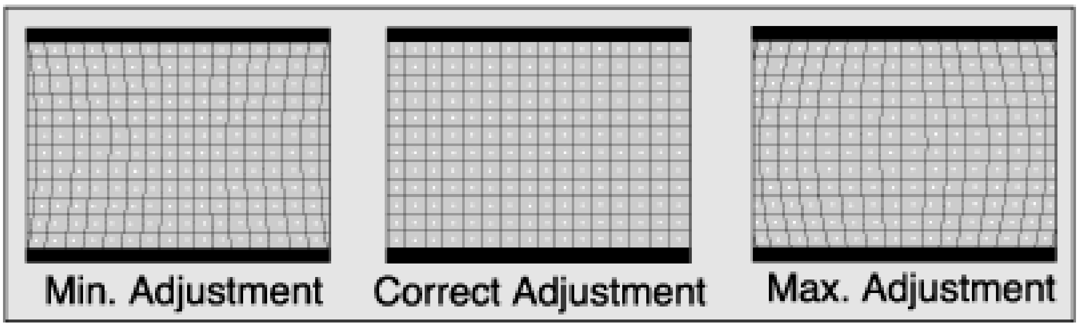
TOP PREVIOUS NEXT

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust PCC DATA so that the 1st line and 3rd line make a good balance



NOTE

If side and lower side is imbalanced, adjust PCCHG and PCCLG so that PCC make good balance.

TOP PREVIOUS NEXT

# 15.9.16 (480i/480p 16:9 and 480i/480p split) Corner PCC adjustment

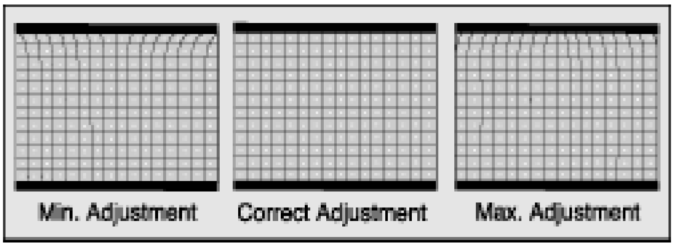
TOP PREVIOUS NEXT

PREPARATION

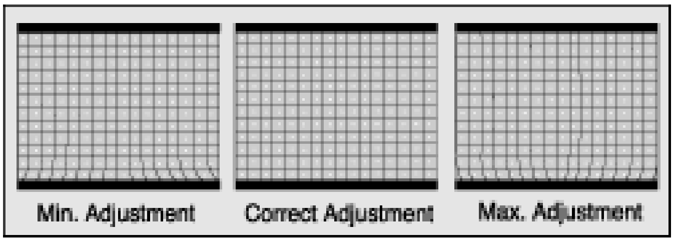
1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. To adjust upper and lower linearity.
2. Adjust TOPG to straighten upper lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. Adjust BTMG to straighten lower lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If TOP-BOTTOM bending point is not so good, adjust TOPSL and BTMSL of slice level.

TOP PREVIOUS NEXT

# 15.9.17 1080i letter and split) H-Center adjustment

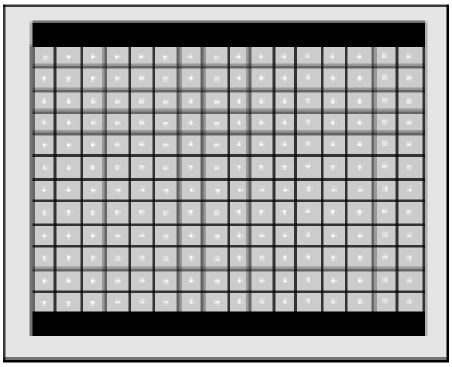
TOP PREVIOUS NEXT

PREPARATION

1. Apply a 1080i pattern.
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. If horizontal linearity is poor, in service mode, adjust data H LIN



2. Apply a pattern to center the picture.
3. If the horizontal center is not aligned, in service mode adjust H POS DATA to adjust the horizontal center of the monoscope pattern to the CRT center.

TOP PREVIOUS NEXT

# 15.9.18 (1080i letter and split) Vertical linearity(V-C) and V-Position adjustment

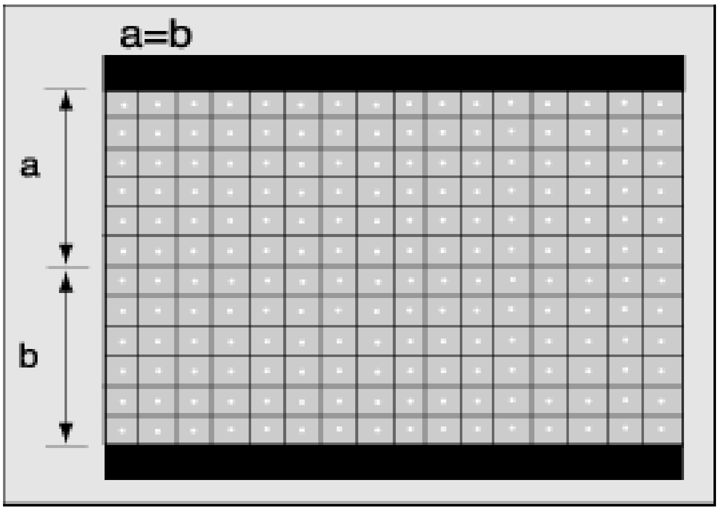
TOP PREVIOUS NEXT

## PREPARATION

1. Apply a 1080i pattern.
2. Normalize the picture settings.
3. Set picture mode to VIVID

## PROCEDURE

1. Enter service mode, select DAC adjustment V-RAS and adjust pattern to center vertical position to the CRT center.
2. Adjust linearity data V-C so that interval of a is same as b (a=b).



3. If the v-position is not at the CRT center, adjust again.

TOP PREVIOUS NEXT

# 15.9.19 (1080i letter and split) V-S, V-Size adjustment

TOP PREVIOUS NEXT

PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

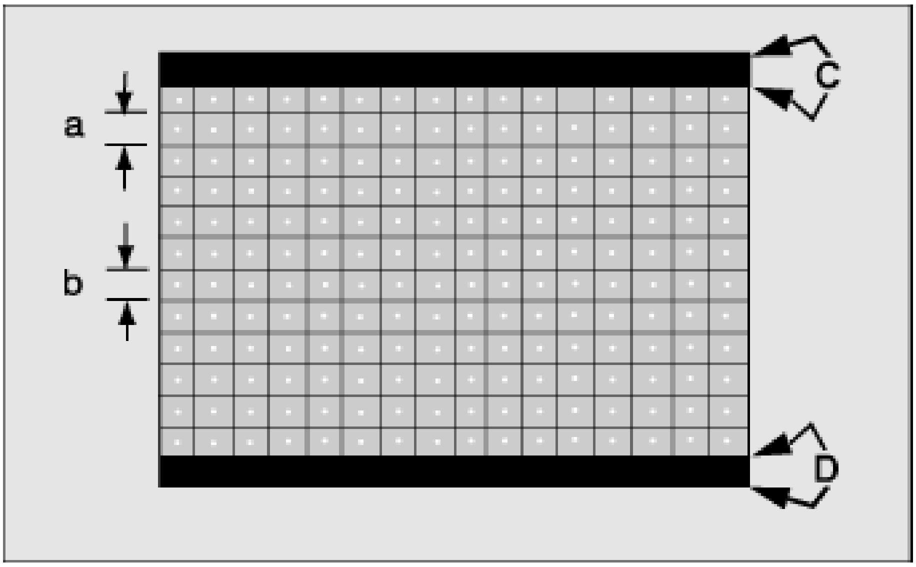
1. Enter to service mode
2. Adjust VAMP so that width C and D becomes 60mm
3. Check a and b sizes, If b-a < -1.5mm (in top and bottom extending case)
    - Increase V-S DATA by one step
    - Adjust VEAMP so that width C and D becomes 60mm.

      NOTE

      Repeat until b-a ± 1.5mm
4. Check a and b sizes, If b-a > -1.5mm (in top and bottom extending case)
    - Decrease V-S DATA by one step
    - Adjust VEAMP so that width C and D becomes 60mm.

      NOTE

      Repeat until b-a ± 1.5mm



TOP PREVIOUS NEXT

# 15.9.20 (1080i letter and split) Trapezoid adjustment

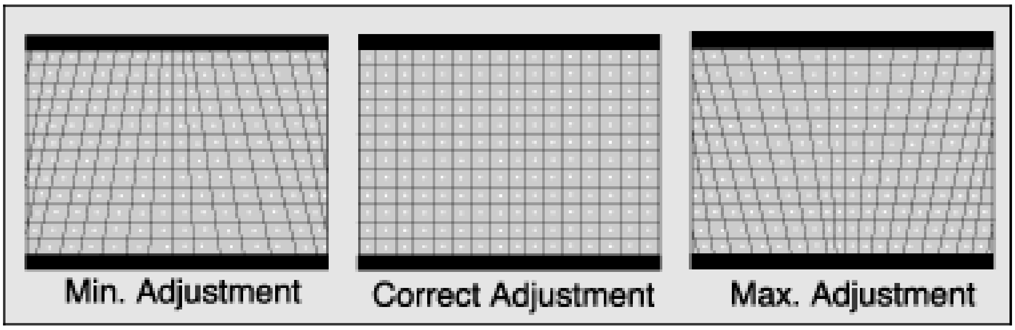
TOP PREVIOUS NEXT

PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select TRAP and adjust DATA so that lines at right and left are vertical like a solid line


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.21 (1080i letter and split) Parallelogram adjustment

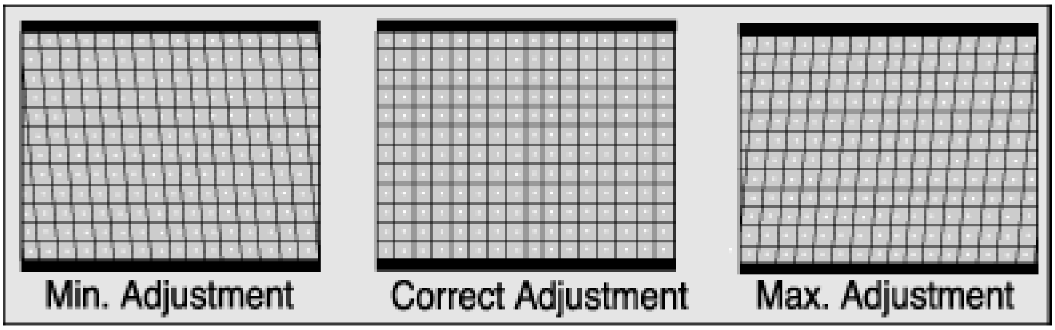
TOP PREVIOUS NEXT

PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select PARA and adjust so that the lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.22 (1080i letter and split) PCC adjustment

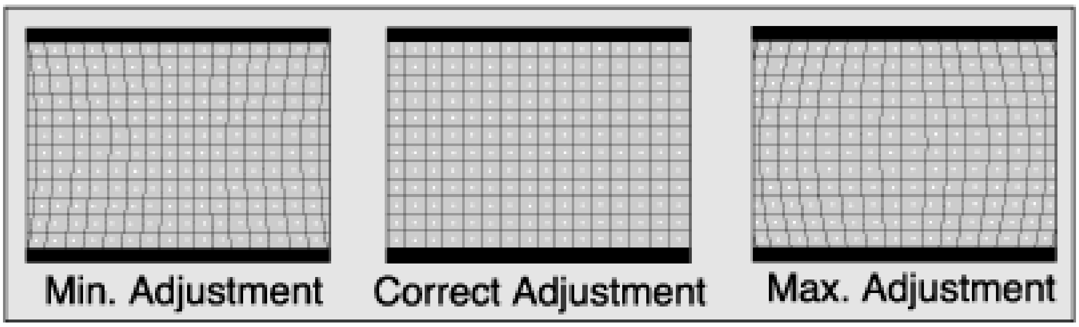
TOP PREVIOUS NEXT

PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust PCC DATA so that the 1st line and 3rd line make a good balance



NOTE:

If upper and lower side is unbalaced, adjust PCCHG and PCCLG so that PCC make good balance.

TOP PREVIOUS NEXT

# 15.9.23 (1080i letter and split) Corner PCC adjustment

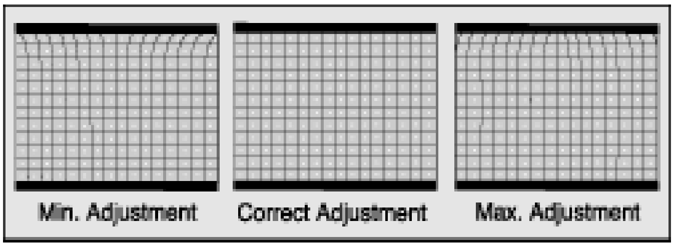
TOP PREVIOUS NEXT

PREPARATION

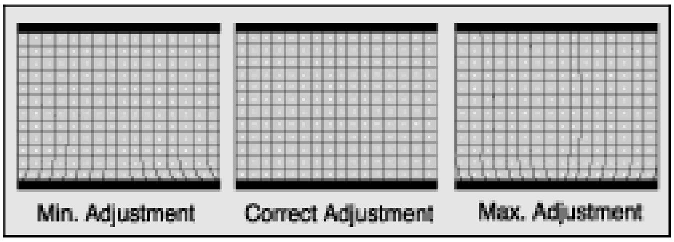
1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. To adjust upper and lower linearity.
2. Adjust TOPG to straighten upper lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. Adjust BTMG to straighten lower lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If TOP-BOTTOM bending point is not so good, adjust TOPSL and BTMSL of slice level.

TOP PREVIOUS NEXT

# 15.9.24 (1080i letter and split) E-W PCC adjustment

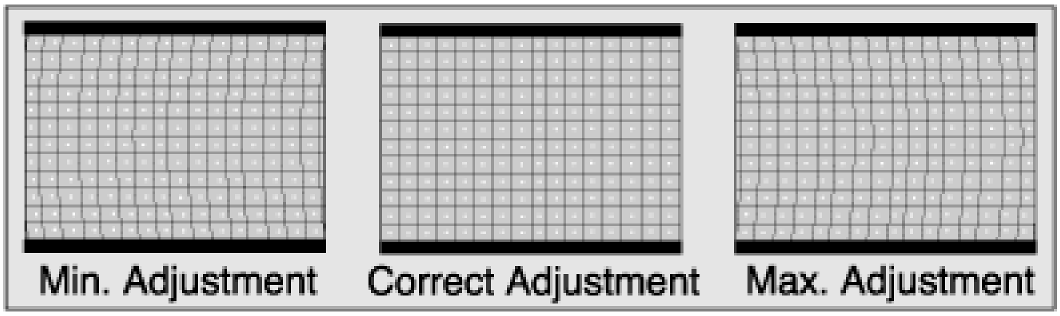
TOP PREVIOUS NEXT

## PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

## PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust SIDE DATA so that the lines at left and right become vertical


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.25 (1080i letter and split) H-Width adjustment

TOP PREVIOUS NEXT

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Adjust H WID DATA so that left width and right become in good balance (not too wide or narrow).

TOP PREVIOUS NEXT

# 15.9.26 (1080i full)
# H-Size, V-SIZE adjustment

TOP PREVIOUS NEXT

## PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Set mode to 4x3 in set-up menu
4. Normalize the picture settings.
5. Set picture mode to VIVID

## PROCEDURE

1. Adjust H WID and HPOS DATA so that left width and right become in good balance (not too wide or narrow and centered).
2. Adjust VEAMP and VRAS DATA so that upper h and lower become in good balance (not too wide or narrow and centered)

TOP PREVIOUS NEXT

# 15.9.27 (1080i full) Vertical linearity(V-C) and V-Position adjustment

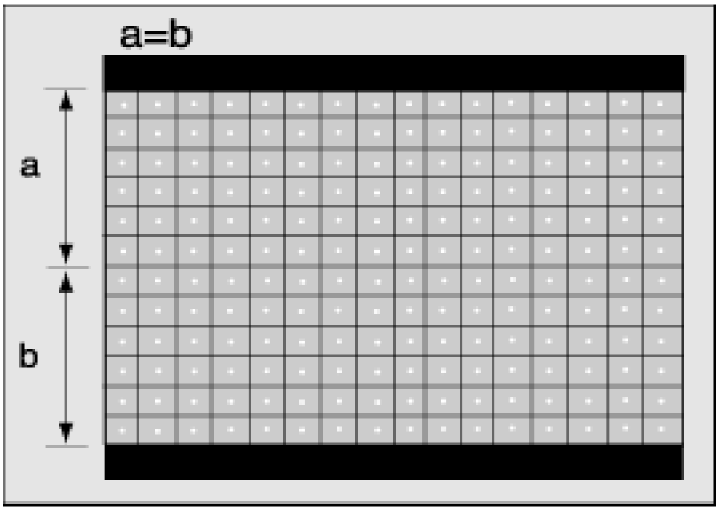
TOP PREVIOUS NEXT

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Set mode to 4x3 in set-up menu
4. Normalize the picture settings.
5. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select DAC adjustment
   VRAS and adjust pattern to center vertical position to the CRT center.
2. Adjust linearity data V-C so that interval of a is same as b (a=b).



3. If the v-position is not at the CRT center, adjust again.

TOP PREVIOUS NEXT

# 15.9.28 (1080i full)
# V-S, V-Size adjustment

TOP PREVIOUS NEXT

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Set mode to 4x3 in set-up menu
4. Normalize the picture settings.
5. Set picture mode to VIVID

PROCEDURE

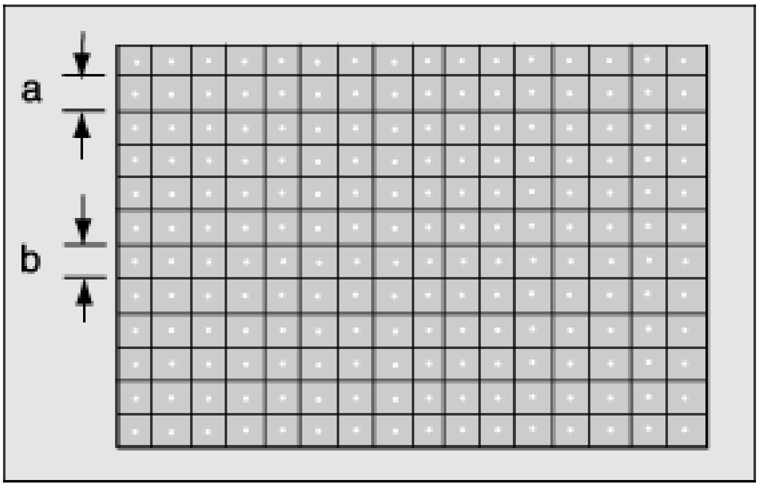
1. Enter to service mode
2. Adjust VAMP to correct vertical size.
3. Check a and b sizes, If b-a < -1.5mm (in top and bottom extending case)
    - Increase V-S DATA by one step
    - Adjust VEAMP to correct vertical size.

      NOTE

      Repeat until b-a ± 1.5mm
4. Check a and b sizes, If b-a > -1.5mm (in top & bottom shortening case)
    - Decrease V-S by one step.
    - Adjust VEAMP to correct vertical size

      NOTE

Repeat until b-a ± 1.5mm



TOP PREVIOUS NEXT

# 15.9.29 (1080i full)
# Trapezoid adjustment

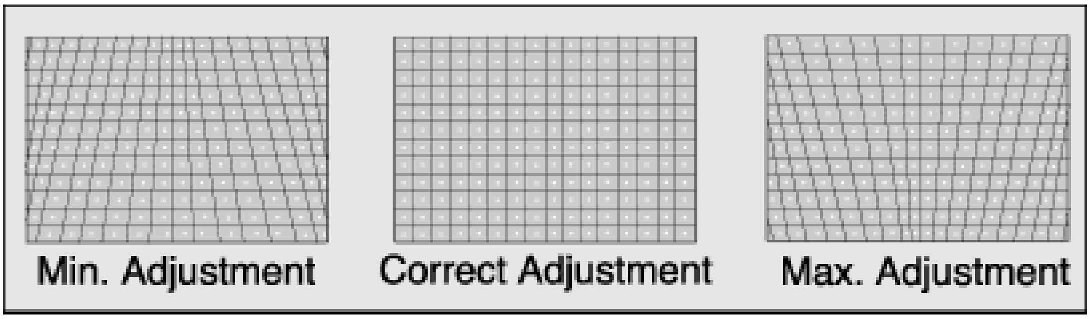
TOP PREVIOUS NEXT

## PREPARATION

1. Apply a 1080i pattern
2. Set mode to 4x3 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

## PROCEDURE

1. Enter service mode, select TRAP and adjust DATA so that lines at right and left are vertical like a solid line


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.30 (1080i full) Parallelogram adjustment

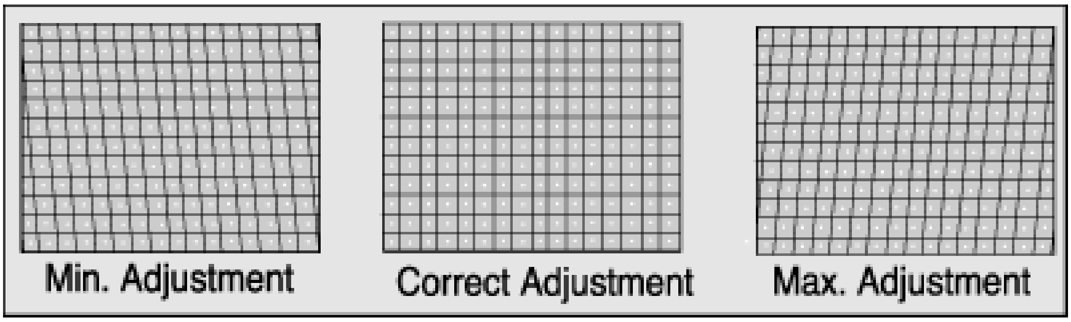
TOP PREVIOUS NEXT

## PREPARATION

1. Apply a 1080i pattern
2. Set mode to 4x3 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

## PROCEDURE

1. Enter service mode, select PARA and adjust so that the lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.31 (1080i full) E-W PCC adjustment

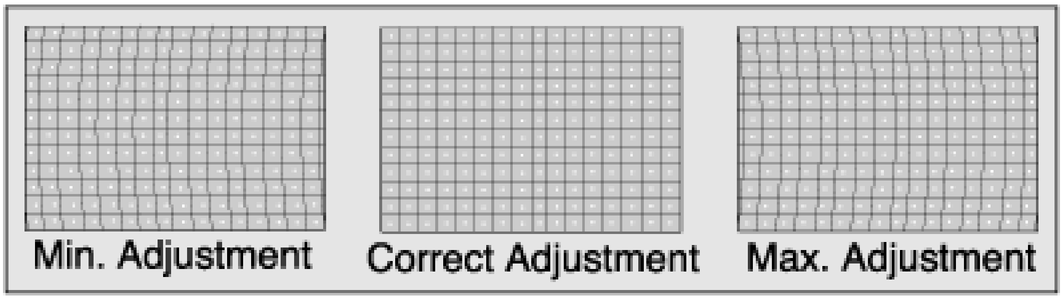
TOP PREVIOUS NEXT

## PREPARATION

1. Apply a 1080i pattern
2. Set mode to 4x3 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

## PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust SIDE DATA so that the lines at left and right become vertical


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.9.32 (1080i full) Corner PCC adjustment

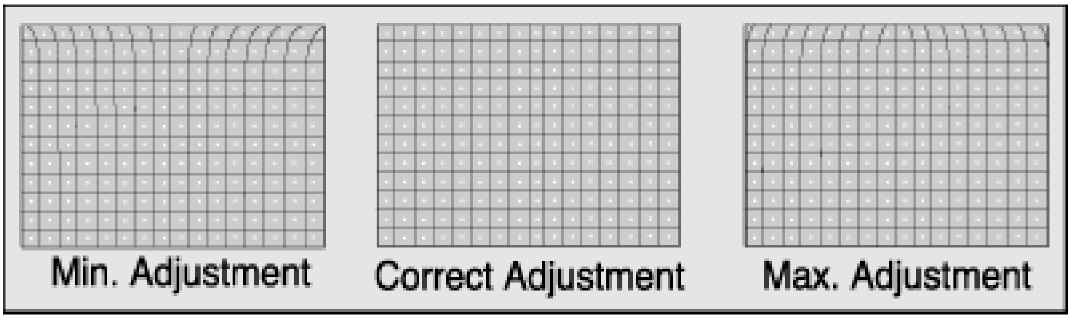
TOP PREVIOUS NEXT

PREPARATION

1. Apply a 1080i pattern
2. Set mode to 4x3 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

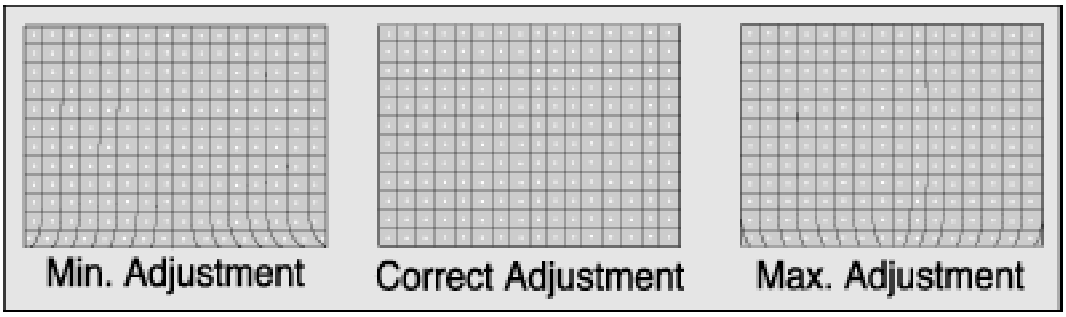
1. To adjust upper and lower linearity.
2. Adjust TOPG to straighten upper lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. Adjust BTMG to straighten lower lines

   NOTE

   If TOP-BOTTOM bending point is not so good, adjust TOPSL and BTMSL of slice level.


Min. Adjustment
Correct Adjustment
Max. Adjustment

TOP PREVIOUS NEXT

# 15.10 MTS circuit adjustmens

TOP PREVIOUS NEXT

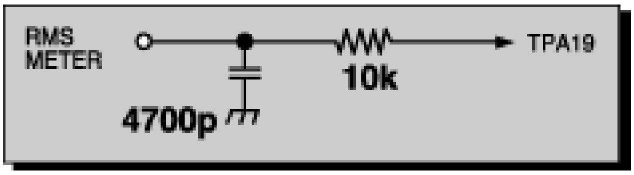
The MTS circuit adjustments require two steps:

1. Input level adjustment.
2. Stereo separation adjustment.

Input level adjustment
Service DAC adjustment (MTSIN)

PREPARATION

1. Connect an RMS meter with filter jig as shown in figure to TPA19 (L_OUT)



2. Connect an RF signal generator to the RF antenna input.

PROCEDURE

1. Apply the following signal from the RF signal generator:
    - Video: 100 IRE flat field, 30% modulation.
    - Audio: 300Hz, 100% modulation, monaural (70 ±5dB, 75Ω OPEN, P/S 10dB). Make sure that the 75µs pre-emphasis is OFF.
2. Adjust the MTS input level adjustment MTSIN data until the RMS voltage measured is 106 ± 6.0mVrms.

Stereo separation adjustment (SEPAH)

PREPARATION

1. Connect an R.F. signal generator to the RF antenna input.
2. Connect a scope to TPA20.

## PROCEDURE

1. Select stereo mode in audio menu
2. Apply the following signal from the RF signal generator:
    - Video: 100 IRE flat field, 30% modulation.
    - Audio: 300Hz, 30% modulation, stereo (left only) (70±5dB, 75Ω OPEN, P/S 10dB).

      NOTE

      After setting 30% modulation with P.L. SW and N.R. SW OFF, turn P.L. SW and N.R. SW ON.
3. In service mode, adjust the MTS Low-Level separation adjustment SEPAL data until the amplitude displayed on the scope is minimum.
4. Apply the following signal from the RF signal generator:
    - Video: 100 IRE flat field, 30% modulation
    - Audio: 3KHz, 30% modulation, stereo (left only) (70 ±5dB, 75Ω OPEN, P/S 10dB).

      NOTE

      After setting 30% modulation with P.L. SW and N.R. SW OFF, turn P.L. SW and N.R. SW ON.
5. Adjust the MTS High-level separation adjustment SEPAH until the amplitude displayed on the scope is minimum.
6. Repeat above steps 2 through 5 until the amplitude is at minimum for both signals.

TOP PREVIOUS NEXT

# 15.11 Clock adjustment (CLOCK)

TOP PREVIOUS NEXT

## PREPARATION

Connect the frequency counter from TP96
(A13 pin 14) to cold ground

## PROCEDURE

1. Turn the receiver  OFF  with the A.C. power applied.
2. Measure TP96 (A13 pin 14) for the frequency of the waveform and record the reading.

   NOTE

3. TP96 (A13 pin 14) measurement must have at least four digits of resolution following the decimal point. Example: 000.0000
4. Place the receiver into service mode for making electronic adjustment, select the clock adjustment DAC  CLOCK .
5. Calculate and set  CLOCK  based on the following formula:

$$CLOCK = 128 + (0.450)\times 10^{6}\frac{\{(732.4220) - TP96[\mathrm{Hz}]\}}{(732.4220)}$$

   NOTE

   TP96 (A23 pin 21) measurement will not change regardless of the value stored in CLOCK.

TOP PREVIOUS NEXT

# 15.12 Service Adjustments Mechanical Controls

TOP PREVIOUS NEXT

## WIDTH CORRECTION ADJUSTMENT

### Note

Perform this adjustment only when FBT is changed.

### Preparation

Connect the DVM (digital voltage meter) (+) lead to connector D10 pin-2 or TPQ27; and (-) lead to connector D10 pin-4.

### Procedure

1. Apply a black pattern.
2. Adjust R524 on D-Board so that the voltage on connector D10 pin-2 or TPQ27 is 1.8±0.1V on D-Board.

## FOCUS (PART OF T551)

### Preparation

Apply a crosshatch pattern with dots.

### Procedure

1. Adjust the FOCUS control to obtain the sharpest and clearest dot pattern.
    - F1 focus control adjusts vertically.
    - F2 focus control adjusts horizontally.
    - Use this two controls to adjust focus, until best overall picture is obtained.

TOP PREVIOUS NEXT

# 16 Identification of components

TOP PREVIOUS NEXT

16.1 TV with back cover removed

16.2 A-Board

16.3 D-Board

16.4 L-Board

16.5 DG-Board top

16.6 G-Board bottom

16.7 DF-Board

16.8 K-Board

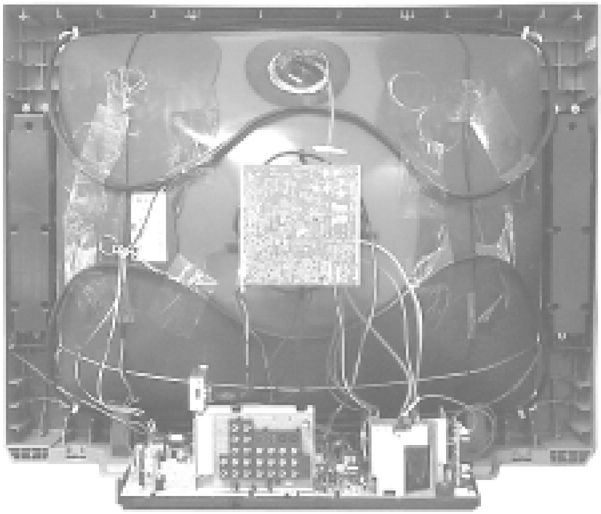
16.9 H-Board

TOP PREVIOUS NEXT

# 16.1 TV with back cover removed

TOP PREVIOUS NEXT

TV View with back cover removed

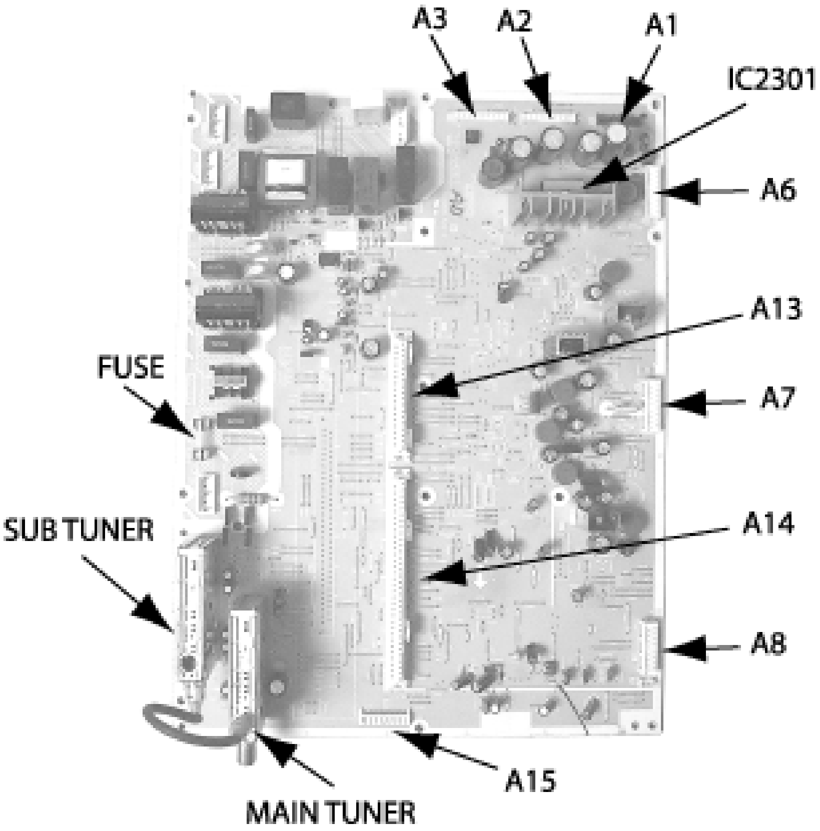


TOP PREVIOUS NEXT

# 16.2 A-Board

TOP PREVIOUS NEXT

A-Board view

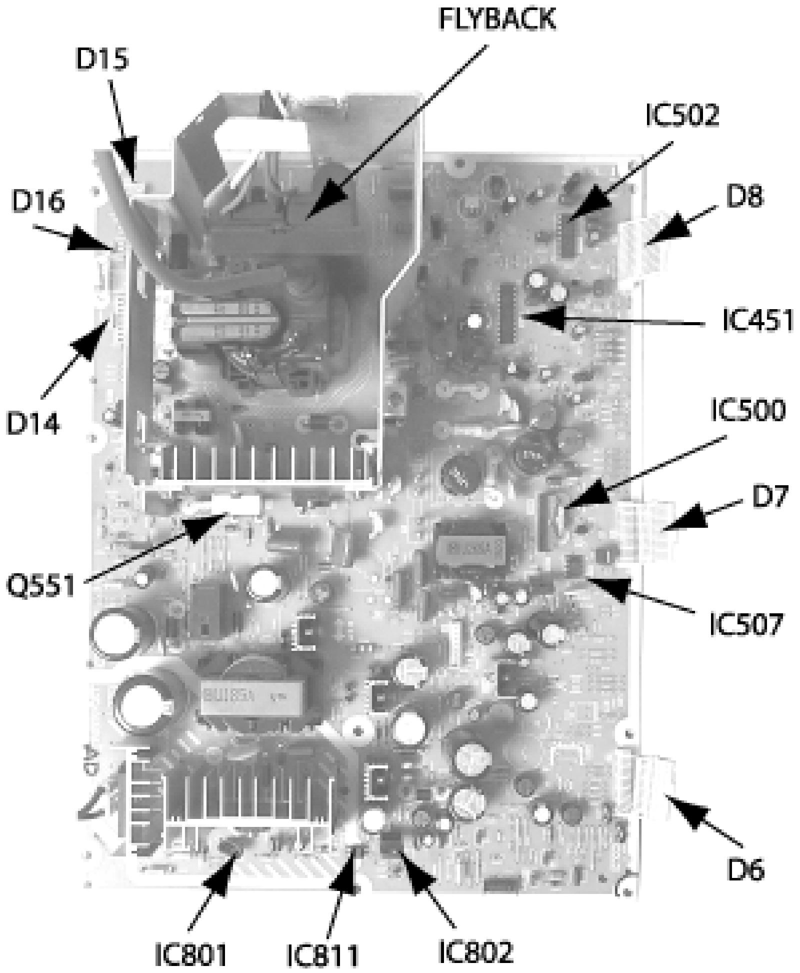

A3
A2
A1
IC2301
A6
A13
FUSE
A7
SUB TUNER
A14
A8
A15
MAIN TUNER

TOP PREVIOUS NEXT

# 16.3 D-Board

TOP PREVIOUS NEXT

D-Board view

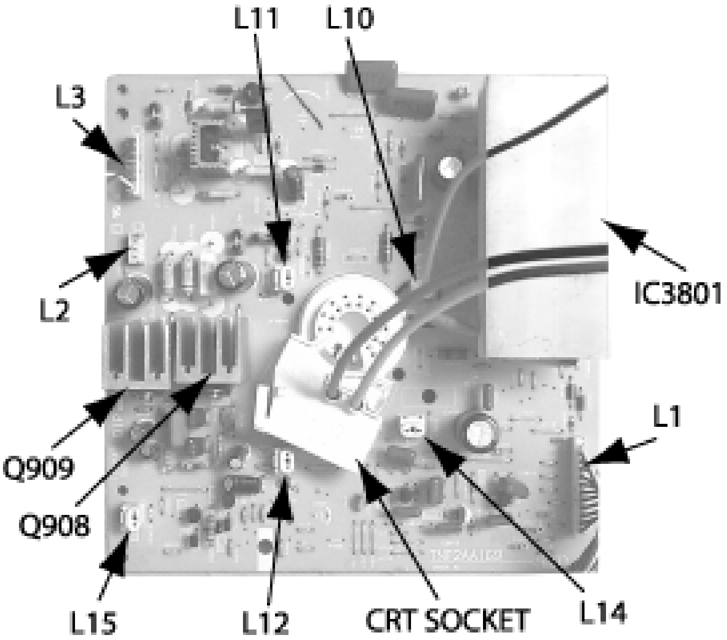

FLYBACK
D15
IC502
D16
D8
IC451
D14
IC500
D7
Q551
IC507
D6
IC801
IC811
IC802

TOP PREVIOUS NEXT

# 16.4 L-Board

TOP PREVIOUS NEXT

L-Board view

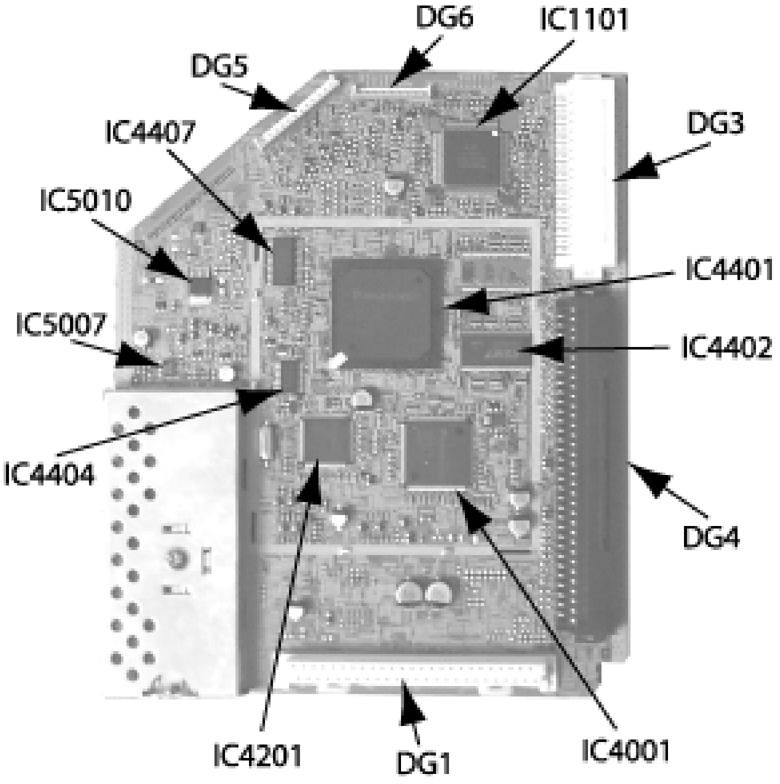

L11
L10
L3
IC3801
L2
L1
Q909
Q908
L15
L12
CRT SOCKET
L14

TOP PREVIOUS NEXT

# 16.5 DG-Board top

TOP PREVIOUS NEXT

DG-Board top view


DG6
IC1101
DG5
DG3
IC4407
IC5010
IC4401
IC5007
IC4402
IC4404
DG4
IC4201
DG1
IC4001

NOTE:

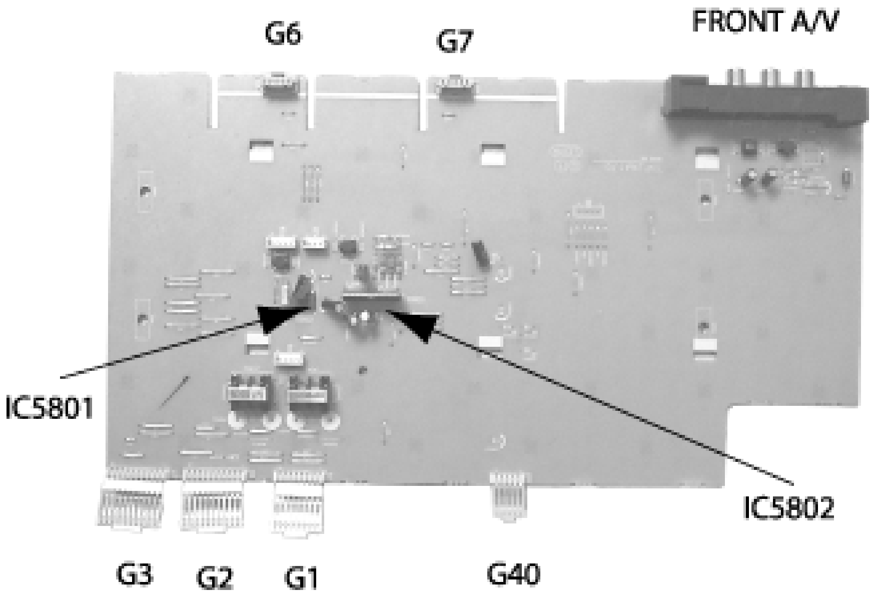
Please ADD 4 to all IC part numbers, EXAMPLE: On board is IC506, then by adding 4 is IC4506

TOP PREVIOUS NEXT

# 16.6 G-Board bottom

TOP PREVIOUS NEXT

G-Board

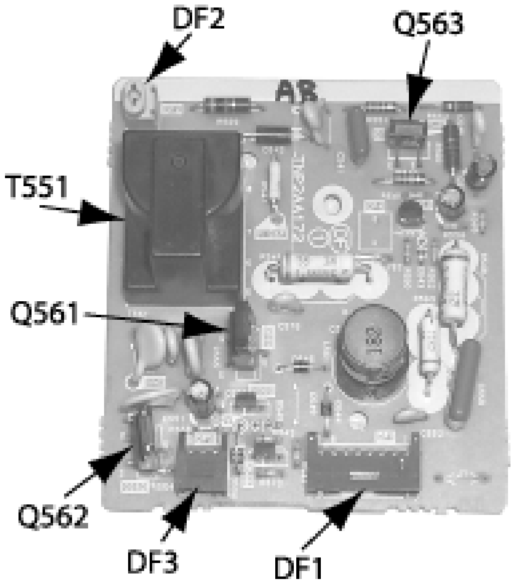

G6
G7
FRONT A/V
IC5801
IC5802
G3
G2
G1
G40

TOP PREVIOUS NEXT

# 16.7 DF-Board

TOP PREVIOUS NEXT

DF-Board view

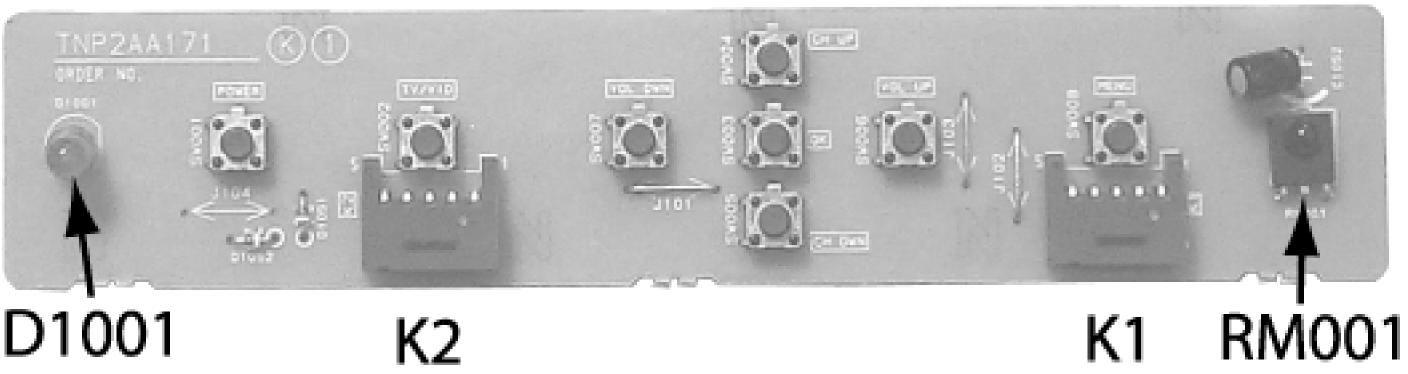

DF2
Q563
T551
Q561
Q562
DF3
DF1

TOP PREVIOUS NEXT

# 16.8 K-Board

TOP PREVIOUS NEXT

K-Board view

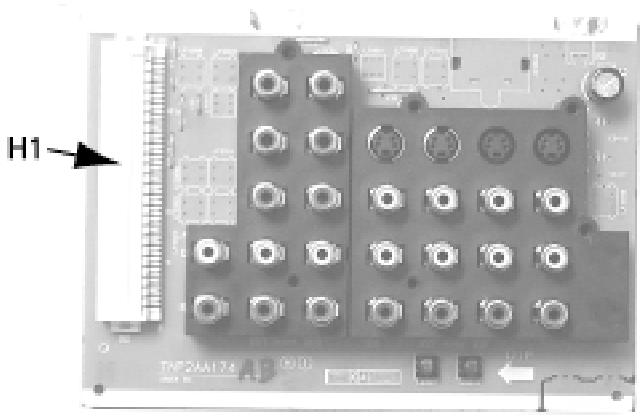

TNP2AA171
ORDER NO.
POWER
TV/VID
VOL DWN
CH UP
OK
CH DWN
VOL UP
MENU
D1001
K2
K1
RM001

TOP PREVIOUS NEXT

# 16.9 H-Board

TOP PREVIOUS NEXT

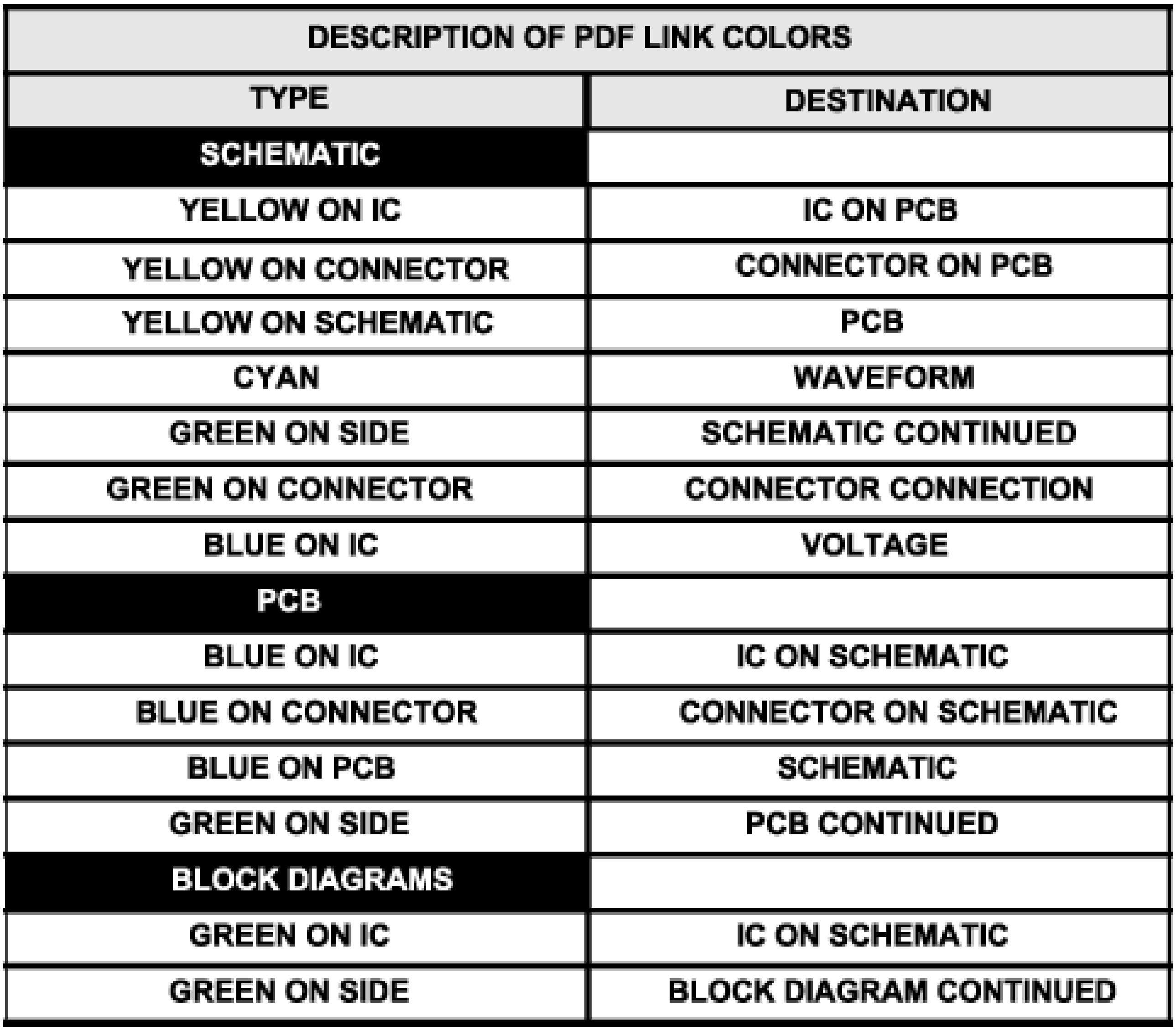
H-Board view



TOP PREVIOUS NEXT

# 17 Reference of PDF links color

TOP PREVIOUS NEXT



| DESCRIPTION OF PDF LINK COLORS | |
|---|---|
| TYPE | DESTINATION |
| **SCHEMATIC** | |
| YELLOW ON IC | IC ON PCB |
| YELLOW ON CONNECTOR | CONNECTOR ON PCB |
| YELLOW ON SCHEMATIC | PCB |
| CYAN | WAVEFORM |
| GREEN ON SIDE | SCHEMATIC CONTINUED |
| GREEN ON CONNECTOR | CONNECTOR CONNECTION |
| BLUE ON IC | VOLTAGE |
| **PCB** | |
| BLUE ON IC | IC ON SCHEMATIC |
| BLUE ON CONNECTOR | CONNECTOR ON SCHEMATIC |
| BLUE ON PCB | SCHEMATIC |
| GREEN ON SIDE | PCB CONTINUED |
| **BLOCK DIAGRAMS** | |
| GREEN ON IC | IC ON SCHEMATIC |
| GREEN ON SIDE | BLOCK DIAGRAM CONTINUED |

TOP PREVIOUS NEXT

# 18 Conductor Views

TOP PREVIOUS NEXT

18.1 A-Board 1 of 2

18.2 A-Board 2 of 2

18.3 D-Board 1 of 2

18.4 D-Board 2 of 2

18.5 H-Board

18.6 DF-Board

18.7 G-Board 1 of 2

18.8 G-Board 2 of 2

18.9 L-Board

18.10 K-Board

TOP PREVIOUS NEXT

# 18.1 A-Board 1 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 18.2 A-Board 2 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 18.3 D-Board 1 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 18.4 D-Board 2 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 18.5 H-Board

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 18.6 DF-Board

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 18.7 G-Board 1 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 18.8 G-Board 2 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 18.9 L-Board

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 18.10 K-Board

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 19 Block Diagrams

TOP PREVIOUS NEXT

19.1 Audio Block Diagram

19.2 Video Block Diagram

TOP PREVIOUS NEXT

# 19.1 Audio Block Diagram

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 19.2 Video Block Diagram

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20 Schematic Diagrams

TOP PREVIOUS NEXT

20.1 Schematic notes in english

20.2 Schematic notes in spanish

20.3 A-Board schematic 1 of 4

20.4 A-Board schematic 2 of 4

20.5 A-Board schematic 3 of 4

20.6 A-Board schematic 4 of 4

20.7 D-Board schematic 1 of 5

20.8 D-Board schematic 2 of 5

20.9 D-Board schematic 3 of 5

20.10 D-Board schematic 4 of 5

20.11 D-Board schematic 5 of 5

20.12 DG-Board schematic 1 of 11

20.13 DG-Board schematic 2 of 11

20.14 DG-Board schematic 3 of 11

20.15 DG-Board schematic 4 of 11

20.16 DG-Board schematic 5 of 11

20.17 DG-Board schematic 6 of 11

20.18 DG-Board schematic 7 of 11

20.19 DG-Board schematic 8 of 11

20.20 DG-Board schematic 9 of 11

20.21 DG-Board schematic 10 of 11

20.22 DG-Board schematic 11 of 11

20.23 DF-Board schematic 1 of 2

20.24 L-Board schematic 1 of 2

20.25 L-Board schematic 2 of 2

20.26 G-Board schematic 1 of 2

20.27 G-Board schematic 2 of 2

20.28 H-Board schematic

20.29 K-Board schematic

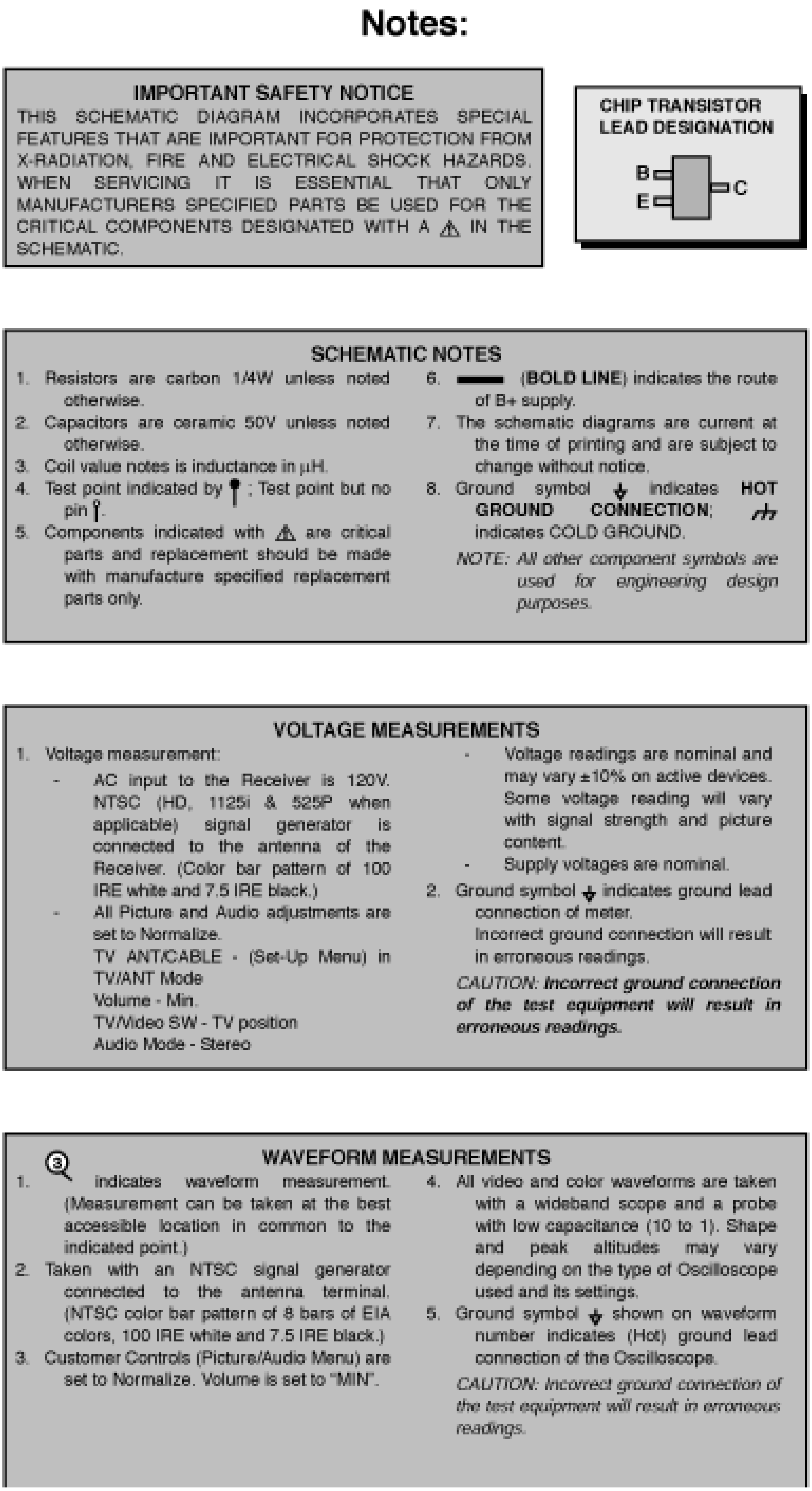
20.30 Voltages

20.31 Waveforms

TOP PREVIOUS NEXT

# 20.1 Schematic notes in english

TOP PREVIOUS NEXT



## Notes:

### IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

**CHIP TRANSISTOR LEAD DESIGNATION**

B

E

C

### SCHEMATIC NOTES

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ● ; Test point but no pin ○.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⊥ indicates COLD GROUND.

*NOTE: All other component symbols are used for engineering design purposes.*

### VOLTAGE MEASUREMENTS

1. Voltage measurement:
   - AC input to the Receiver is 120V. NTSC (HD, 1125i & 525P when applicable) signal generator is connected to the antenna of the Receiver. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min.
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter.
   Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

### WAVEFORM MEASUREMENTS

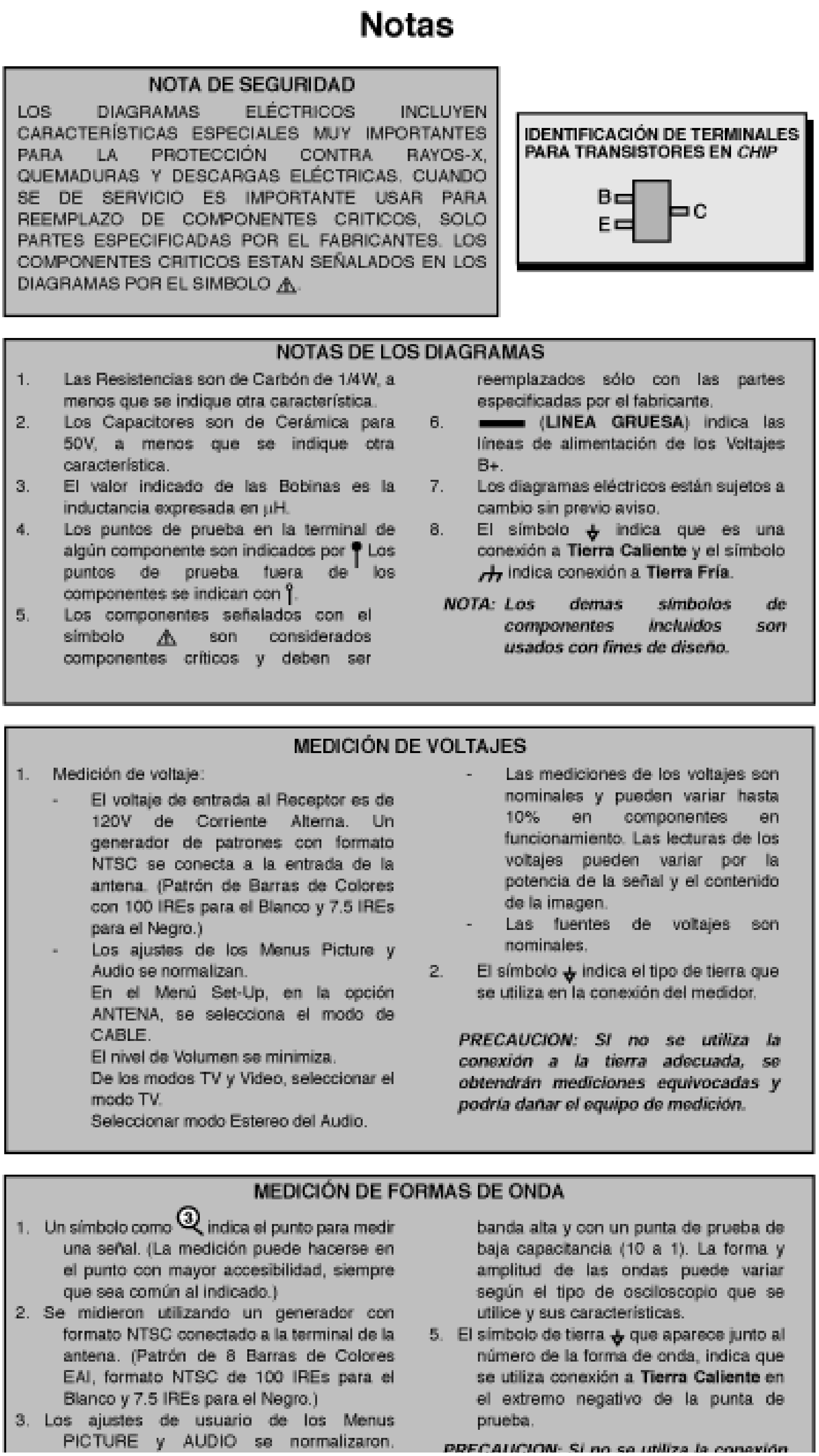
1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

*CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.*

TOP PREVIOUS NEXT

# 20.2 Schematic notes in spanish

TOP PREVIOUS NEXT



## Notas

### NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

**IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP***

### NOTAS DE LOS DIAGRAMAS

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ⧳ Los puntos de prueba fuera de los componentes se indican con ⫯.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⊥ indica conexión a **Tierra Fría**.

*NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.*

### MEDICIÓN DE VOLTAJES

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

***PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.***

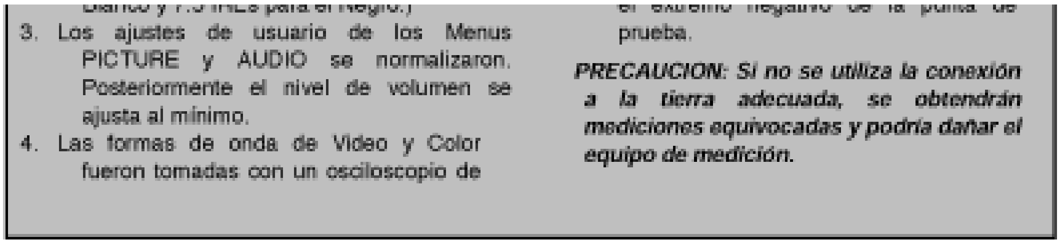
### MEDICIÓN DE FORMAS DE ONDA

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron.

banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.

5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

***PRECAUCION: Si no se utiliza la conexión***



Blanco y 7.5 IREs para el Negro.)

3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de

el extremo negativo de la punta de prueba.

***PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.***

TOP PREVIOUS NEXT

# 20.3 A-Board schematic 1 of 4

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.4 A-Board schematic 2 of 4

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.5 A-Board schematic 3 of 4

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.6 A-Board schematic 4 of 4

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.7 D-Board schematic 1 of 5

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.8 D-Board schematic 2 of 5

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.9 D-Board schematic 3 of 5

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.10 D-Board schematic 4 of 5

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.11 D-Board schematic 5 of 5

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.12 DG-Board schematic 1 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.13 DG-Board schematic 2 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.14 DG-Board schematic 3 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.15 DG-Board schematic 4 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.16 DG-Board schematic 5 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.17 DG-Board schematic 6 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.18 DG-Board schematic 7 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.19 DG-Board schematic 8 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.20 DG-Board schematic 9 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.21 DG-Board schematic 10 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.22 DG-Board schematic 11 of 11

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.23 DF-Board schematic 1 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.24 L-Board schematic 1 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.25 L-Board schematic 2 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.26 G-Board schematic 1 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.27 G-Board schematic 2 of 2

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.28 H-Board schematic

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.29 K-Board schematic

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.30 Voltages

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 20.31 Waveforms

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 21 Parts Location

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

# 22 Parts list

TOP PREVIOUS NEXT

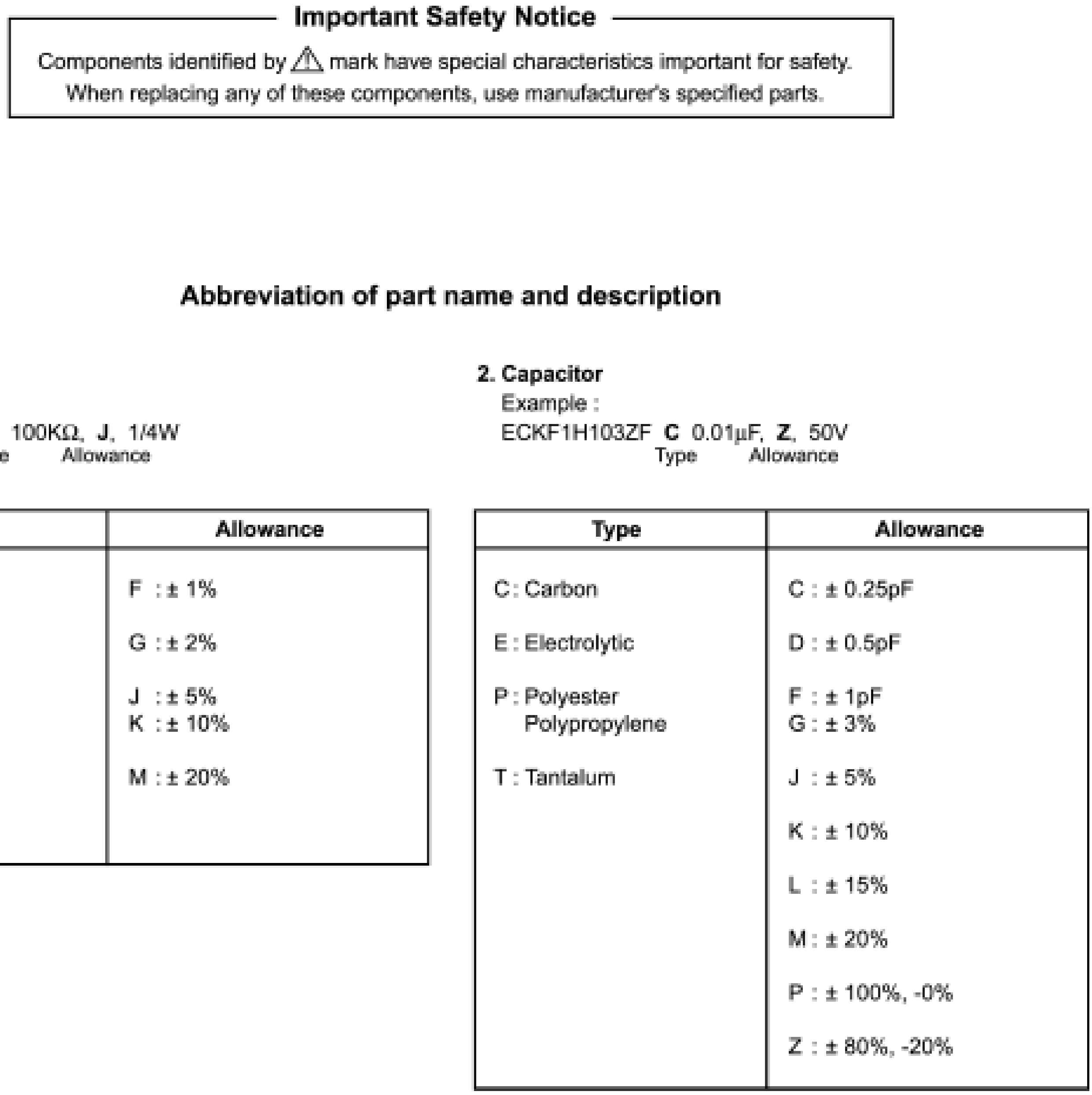
22.1 Description of abbreviations guide

22.2 Parts list

TOP PREVIOUS NEXT

# 22.1 Description of abbreviations guide

TOP PREVIOUS NEXT



**Important Safety Notice**

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use manufacturer's specified parts.

## Abbreviation of part name and description

**1. Resistor**
Example :
ERD25TJ104 **C** 100KΩ, **J**, 1/4W
Type Allowance

| Type | Allowance |
|---|---|
| C : Carbon | F : ± 1% |
| F : Fuse | G : ± 2% |
| M : Metal Oxide<br>Metal Film | J : ± 5%<br>K : ± 10% |
| S : Solid | M : ± 20% |
| W : Wire Wound | |

**2. Capacitor**
Example :
ECKF1H103ZF **C** 0.01μF, **Z**, 50V
Type Allowance

| Type | Allowance |
|---|---|
| C : Carbon | C : ± 0.25pF |
| E : Electrolytic | D : ± 0.5pF |
| P : Polyester<br>Polypropylene | F : ± 1pF<br>G : ± 3% |
| T : Tantalum | J : ± 5% |
| | K : ± 10% |
| | L : ± 15% |
| | M : ± 20% |
| | P : ± 100%, -0% |
| | Z : ± 80%, -20% |

TOP PREVIOUS NEXT

# 22.2 Parts list

TOP PREVIOUS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| CAPACITORS | | | |
| C037 | ECA0JM222B | CAP,E 2200UF-6.3V | |
| C038 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C047 | ECA1HM330B | CAP,E 33UF-50V | |
| C048 | ECA1HMR22B | CAP,E .22UF-50V | |
| C052 | ECA1HM4R7B | CAP,E 4.7UF-50V | |
| C053 | ECA1HM2R2B | CAP,E 2.2UF-50V | |
| C054 | ECA1HM4R7B | CAP,E 4.7UF-50V | |
| C055 | ECA1VM470B | CAP,E 47UF-35V | |
| C056 | ECA1VM471B | CAP,E 470UF-35V | |
| C059 | ECJ2VC1H101J | CAP,C 100PF-J-50V | |
| C060 | ECJ2VC1H101J | CAP,C 100PF-J-50V | |
| C061 | ECA1HMR22B | CAP,E .22UF-50V | |
| C062 | ECA1HM2R2B | CAP,E 2.2UF-50V | |
| C451 | ECA1EM471B | CAP,E 470UF-25V | |
| C452 | ECA1EM471B | CAP,E 470UF-25V | |
| C453 | ECA1HM101B | CAP,E 100UF-50V | |
| C454 | ECQV1H224JL3 | CAP,P .22UF-J-50V | |
| C455 | ECA1CM221B | CAP,E 10UF-16V | |
| C456 | ECJ2VB1H472K | CAP,C .0047UF-K-50V | |
| C457 | ECQB1H471JF3 | CAP,P 470PF-J-50V | |
| C458 | ECQV1H105JL3 | CAP,P 1.0UF-J-50V | |
| C459 | ECQE2104KF3 | CAP,P .10UF-K-200V | |
| C460 | ECQE2224KF3 | CAP,P .22UF-K-200V | |
| C461 | ECA1HM010B | CAP,E 1UF-50V | |
| C462 | ECA0JM221B | CAP,E 220UF-6.3V | |
| C463 | ECA1VM470B | CAP,E 47UF-35V | |
| C467 | ECQV1H224JL3 | CAP,P .22UF-J-50V | |
| C468 | ECJ2VB1H272K | CAP,C .0027UF-K-50V | |
| C469 | ECJ2FB1H104K | CAP,C .1UF-K-50V | |
| C469 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C471 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C472 | ECA1HM4R7B | CAP,E 4.7UF-50V | |

| | | | |
|---|---|---|---|
| C502 | ECJ2VF1H104Z | CAP,C .1UF-Z-50V | |
| C502 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C503 | ECJ2VB1H102K | CAP,C .001UF-K-50V | |
| C505 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C507 | ECEA2CNR47SB | CAP,E .47UF-160V | |
| C508 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C509 | ECKR3D222KBP | CAP,C 2200PF-K-2KVDC | |
| C510 | ECWH20392JVY | CAP,P 3900PF-J-2KV | |
| C511 | ECWH20472JVB | CAP,P 4700PF-J-2KV | |
| C512 | ECA1HMR47B | CAP,E .47UF-50V | |
| C514 | ECQM4472JZW | CAP,P 4700PF-J-400V | |
| C515 | ECKR3A222KBP | CAP,C .0022UF-K-1KV | |
| C516 | ECQB1H223JF3 | CAP,P .022UF-J-50V | |
| C517 | ECJ2VG1H151J | CAP,C 150-J-50V | |
| C518 | ECKW3D681KBR | CAP,C 680PF-K-2KV | |
| C519 | ECKW3D681KBP | CAP,C 680PF-K-2KV | |
| C520 | ECKW3D222KBP | CAP,C 2200UF-K-2KV | |
| C521 | ECWF2304JSR | CAP,P .30UF-J-200V | |
| C523 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C524 | ECQE1224KF3 | CAP,P .22UF-K-100V | |
| C525 | EEUNA1E220B | CAP,E 22UF-25V | |
| C526 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C527 | ECQV1H224JL3 | CAP,P .22UF-J-50V | |
| C529 | ECQB1H473JF3 | CAP,P .047UF-J-50V | |
| C532 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C534 | ECQB1H103JF3 | CAP,P .01UF-J-50V | |
| C535 | ECQV1H104JL3 | CAP,P .10UF-J-50V | |
| C536 | ECEA1EN100UB | CAP,E 10UF-25V | |
| C537 | ECQB1H473JF3 | CAP,P .047UF-J-50V | |
| C538 | ECA1CM471B | CAP,E 470UF-16V | |
| C539 | ECA1CM471B | CAP,E 470UF-16V | |
| C541 | ECQE6103RKF | CAP,P.010UF-K-100V | |
| C543 | ECKW3D151KBP | CAP,C 150PF-K-2KV | |
| C544 | ECA1HM010B | CAP,E 1UF-50V | |
| C545 | ECKR3D471KBP | CAP,C 470PF-K-2KV | |
| C546 | ECKW3D102KBR | CAP,C 1000PF-K-2KV | |
| C547 | ECKR3A102KBP | CAP,C 1000PF-K-1KV | |
| C548 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C550 | ECCN3A470KGE | CAP,C 47PF-K-1KV | |

| | | | |
|---|---|---|---|
| C551 | ECKR3A332KBP | CAP,C 3300PF-K-1KV | |
| C553 | ECA1CM101B | CAP,E 100UF-16V | |
| C554 | ECA1VM101B | CAP,E 100UF-35V | |
| C555 | ECKR3D152KBP | CAP,C .0015UF-K-2KVDC | |
| C556 | ECA1VM470B | CAP,E 47UF-35V | |
| C558 | ECQE2474KF3 | CAP,P .47UF-K-200V | |
| C560 | ECA1HM100B | CAP,E 10UF-50V | |
| C561 | ECA2EHG470E | CAP,E 47UF-250V | |
| C562 | ECKR3A561KBP | CAP,C 560PF-K-1KV | |
| C563 | EEUEB2E330E | CAP,E 33UF-100V | |
| C564 | ECA1VM470B | CAP,E 47UF-35V | |
| C566 | ECA1VM470B | CAP,E 47UF-35V | |
| C567 | EEUED2C101E | CAP,E 100UF-100V | |
| C568 | ECWF4683RJB | CAP,P .068UF-R-400V | |
| C569 | ECWF4683RJB | CAP,P .068UF-R-400V | |
| C571 | ECKRHT332KB | CAP,C 3300PF-K | |
| C573 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C574 | ECA1CM100B | CAP,E 10UF-16V | |
| C575 | ECA1CM101B | CAP,E 100UF-16V | |
| C576 | ECA1CM101B | CAP,E 100UF-16V | |
| C576 | ECKR3A331KBP | CAP,C 330PF-K-1KVDC | |
| C577 | ECQE6473RKF | CAP,P .047UF-630V | |
| C578 | ECKW3D681KBR | CAP,C 680PF-K-2KV | |
| C580 | ECQB1H223JF3 | CAP,P .022UF-J-50V | |
| C581 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C582 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C589 | ECQE6184JFB | CAP,P .18UF-J-630V | |
| C590 | ECJ2VB1H471K | CAP,C 470PF-K-50V | |
| C713 | ECKR3A222KBP | CAP,C .0022UF-K-1KV | |
| C714 | ECQE2103KF3 | CAP,P .010UF-K-200V | |
| C801 | ECQU2A224MLA | CAP,P .22UF-M-250V | ⚠ |
| C802 | ECQU2A224MLA | CAP,P .22UF-M-250V | ⚠ |
| C803 | ECQU2A224MLA | CAP,P .22UF-M-250V | ⚠ |
| C804 | ECQU2A224MLA | CAP,P .22UF-M-250V | ⚠ |
| C805 | ECQB1H103JF3 | CAP,P .01UF-J-50V | |
| C806 | ECQU2A103MLA | CAP,P .010UF-M-250V | ⚠ |
| C807 | ECKCNA222MEB | CAP,C 2200PF-M-125V | ⚠ |

| | | | |
|---|---|---|---|
| C808 | ECKCNA222MEB | CAP,C 2200PF-M-125V | ⚠ |
| C809 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C809 | ECQB1H471JF3 | CAP,P 470PF-J-50V | |
| C810 | EETHC2D102J | CAP,E 1000UF-200V | |
| C811 | ECA1HM100B | CAP,E 10UF-50V | |
| C812 | ECA1CM471B | CAP,E 470UF-16V | |
| C813 | ECA1HM010B | CAP,E 1UF-50V | |
| C815 | ECA1EM471B | CAP,E 470UF-25V | |
| C821 | ECKW3D332KBP | CAP,C 3300PF-K-2KV | |
| C822 | ECQB1H102JF3 | CAP,P 1000PF-J-50V | |
| C823 | ECQB1H471JF3 | CAP,P 470PF-J-50V | |
| C824 | ECKW3D102KBP | CAP,C 1000PF-K-2KV | |
| C825 | ECA1HHG470B | CAP,E 47UF-50V | |
| C826 | ECJ2VF1H104Z | CAP,C .1UF-Z-50V | |
| C827 | ECA1HHG010B | CAP,E 1UF-50V | |
| C828 | ECKR3A331KBP | CAP,C 330PF-K-1KVDC | |
| C830 | EC0S2DA471BB | CAP,E 470UF-200V | |
| C831 | ECKW3D102KBP | CAP,C 1000PF-K-2KV | |
| C834 | EEUFC1H222E | CAP,E 2200UF-50V | |
| C835 | ECA2EM101E | CAP,E 100UF-250V | |
| C836 | ECKR3A151KBP | CAP,C 150PF-K-1KV | |
| C840 | EEUFC1E222E | CAP,E 2200UF-25V | |
| C841 | ECA1VHG222E | CAP,E 2200UF-35V | |
| C842 | ECKR3A331KBP | CAP,C 330PF-K-1KVDC | |
| C843 | ECA1VHG222E | CAP,E 2200UF-35V | |
| C843 | EEUFC1E222E | CAP,E 2200UF-25V | |
| C844 | ECKR3A471KBP | CAP,C 470PF-K-1KV | |
| C846 | ECEA1CN101UB | CAP,E 100UF-16V | |
| C851 | ECKR3A151KBP | CAP,C 150PF-K-1KV | |
| C852 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C854 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C855 | ECA1CM101B | CAP,E 100UF-16V | |
| C855 | EEUFC1A471B | CAP,E 470UF-10V | |
| C857 | ECA1CM471B | CAP,E 470UF-16V | |
| C857 | ECA1HM471E | CAP,E 470UF-50V | |
| C858 | ECA1CM101B | CAP,E 100UF-16V | |
| C864 | ECEA1CN101UB | CAP,E 100UF-16V | |
| C867 | ECQM4103RJZ | CAP,P .01UF-J-400V | |

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|---|---|---|---|
| C871 | ECA1CM102B | CAP,E 1000UF-16V | |
| C875 | ECA1HM010B | CAP,E 1UF-50V | |
| C875 | ECQB1H473JF3 | CAP,P .047UF-J-50V | |
| C876 | ECKR3A331KBP | CAP,C 330PF-K-1KVDC | |
| C881 | ECKR3A471KBP | CAP,C 470PF-K-1KV | |
| C882 | ECA1VHG222E | CAP,E 2200UF-35V | |
| C900 | ECJ2VF1C104Z | CAP,C .1UF-Z-16V | |
| C901 | ECJ2VC1H102K | CAP,C .001UF-K-50V | |
| C903 | ECJ2VF1C104Z | CAP,C .1UF-Z-16V | |
| C905 | ECA1CM221B | CAP,E 10UF-16V | |
| C906 | ECJ2VF1C104Z | CAP,C .1UF-Z-16V | |
| C910 | ECQB1223KF3 | CAP,P .22UF-K-100V | |
| C911 | ECQM4103KZ3 | CAP,P .01UF-K-400V | |
| C912 | ECA2CM330E | CAP,E 30UF-160V | |
| C914 | ECQB1223KF3 | CAP,P .22UF-K-100V | |
| C915 | ECA2CHG330E | CAP,E 33UF-160V | |
| C916 | ECA1CM101B | CAP,E 100UF-16V | |
| C917 | ECA1CM101B | CAP,E 100UF-16V | |
| C918 | ECA1CM221B | CAP,E 10UF-16V | |
| C919 | ECJ2VC1H102K | CAP,C .001UF-K-50V | |
| C920 | ECJ2VC1H102K | CAP,C .001UF-K-50V | |
| C927 | ECJ2VF1C104Z | CAP,C .1UF-Z-16V | |
| C1051 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C1052 | ECEA1CKA470B | CAP,E 47UF-16V | |
| C1401 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C1402 | ECJ2VF1C104Z | CAP,C .1UF-Z-16V | |
| C1403 | ECA1VM470B | CAP,E 47UF-35V | |
| C1501 | ECA1VM470B | CAP,E 47UF-35V | |
| C1502 | ECQB1H103JF3 | CAP,P .01UF-J-50V | |
| C1505 | ECQB1H103JF3 | CAP,P .01UF-J-50V | |
| C1506 | ECQB1H223JF3 | CAP,P .022UF-J-50V | |
| C1507 | ECQB1H223JF3 | CAP,P .022UF-J-50V | |
| C1522 | ECA1VM101B | CAP,E 100UF-35V | |
| C1523 | ECA1VM470B | CAP,E 47UF-35V | |
| C1526 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C1528 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C1535 | ECA1HM100B | CAP,E 10UF-50V | |
| C1557 | ECQB1H102JF3 | CAP,P 1000PF-J-50V | |
| C1558 | ECJ2VC1H680J | CAP,C 68PF-J-50V | |

| | | | |
|---|---|---|---|
| C1559 | ECQB1H102JF3 | CAP,P 1000PF-J-50V | |
| C1570 | ECA1VM470B | CAP,E 47UF-35V | |
| C2202 | ECEA1HKA2R2B | CAP,E 2.2UF-50V | |
| C2203 | ECEA1HKA4R7B | CAP,E 4.7UF-50V | |
| C2204 | AP106K016CAE | CAP,T 1OUF-16V | |
| C2205 | ECEA1HKA010B | CAP,E 1.0UF-50V | |
| C2206 | ECQB1H223JF3 | CAP,P .022UF-J-50V | |
| C2207 | AP335K016CAE | CAP,T 3.3UF-16V | |
| C2208 | ECJ2VB1C104K | CAP,C .1UF-K-16V | |
| C2209 | ECJ2VB1C104K | CAP,C .1UF-K-16V | |
| C2210 | ECJ2VB1C104K | CAP,C .1UF-K-16V | |
| C2211 | ECEA1HKA100B | CAP,E 1UF-50V | |
| C2212 | ECQB1H473JF3 | CAP,P .047UF-J-50V | |
| C2215 | ECEA1CKA101B | CAP,E 100UF-16V | |
| C2218 | ECEA1HKAR47B | CAP,E .47UF-50V | |
| C2301 | ECEA1HN100UB | CAP,E 10UF-50V | |
| C2302 | ECJ2VB1H332K | CAP,C .0033UF-K-50V | |
| C2303 | ECJ2VB1H332K | CAP,C .0033UF-K-50V | |
| C2304 | ECJ2VB1H332K | CAP,C .0033UF-K-50V | |
| C2305 | ECEA1HN100UB | CAP,E 10UF-50V | |
| C2306 | ECJ2VB1H332K | CAP,C .0033UF-K-50V | |
| C2307 | ECJ2VB1H332K | CAP,C .0033UF-K-50V | |
| C2308 | ECJ2VB1H332K | CAP,C .0033UF-K-50V | |
| C2310 | ECJ2VF1H104Z | CAP,C .1UF-Z-50V | |
| C2311 | ECA1EM221B | CAP,E 220UF-25V | |
| C2313 | ECA1HM4R7B | CAP,E 4.7UF-50V | |
| C2315 | ECA1HM4R7B | CAP,E 4.7UF-50V | |
| C2318 | ECA1HM2R2B | CAP,E 2.2UF-50V | |
| C2320 | F1J1C225A083 | CAP,C 2.2UF-Z-16V | |
| C2321 | ECJ2VB1H333K | CAP,C .033UF-K-50V | |
| C2322 | ECEA1CN100UB | CAP,E 10UF-16V | |
| C2323 | ECJ2VB1H561K | CAP,C 560PF-K-50V | |
| C2324 | ECJ2VB1H471K | CAP,C 470PF-K-50V | |
| C2325 | ECJ2VC1H270J | CAP,C 27PF-J-50V | |
| C2326 | ECJ2VF1H104Z | CAP,C .1UF-Z-50V | |
| C2327 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C2328 | ECA1EM101B | CAP,E 100UF-25V | |
| C2329 | ECJ2VB1H471K | CAP,C 470PF-K-50V | |
| C2330 | ECJ2VB1H331K | CAP,C 330PF-K-50V | |

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|---|---|---|---|
| C2331 | ECJ2FB1H104K | CAP,C .1UF-K-50V | |
| C2332 | ECJ2VB1H682K | CAP,C .0068UF-K-50V | |
| C2333 | ECJ2VB1H331K | CAP,C 330PF-K-50V | |
| C2334 | ECJ2FB1H104K | CAP,C .1UF-K-50V | |
| C2335 | ECJ2VB1H471K | CAP,C 470PF-K-50V | |
| C2336 | ECJ2VB1H471K | CAP,C 470PF-K-50V | |
| C2337 | ECJ2VB1H682K | CAP,C .0068UF-K-50V | |
| C2338 | ECJ2FB1H104K | CAP,C .1UF-K-50V | |
| C2341 | ECEA1CN100UB | CAP,E 10UF-16V | |
| C2342 | ECJ2VB1H333K | CAP,C .033UF-K-50V | |
| C2345 | EEUFC1E222E | CAP,E 2200UF-25V | |
| C2346 | ECJ2VB1H561K | CAP,C 560PF-K-50V | |
| C2351 | ECJ2VB1H561K | CAP,C 560PF-K-50V | |
| C2352 | ECJ2VB1H561K | CAP,C 560PF-K-50V | |
| C2352 | EEUFC1E222E | CAP,E 2200UF-25V | |
| C2353 | EEUFC1E222E | CAP,E 2200UF-25V | |
| C2354 | ECJ2VB1H561K | CAP,C 560PF-K-50V | |
| C2355 | ECJ2VB1H561K | CAP,C 560PF-K-50V | |
| C2357 | ECJ2VF1H104Z | CAP,C .1UF-Z-50V | |
| C2359 | ECQV1H224JL3 | CAP,P .22UF-J-50V | |
| C2362 | ECQV1H224JL3 | CAP,P .22UF-J-50V | |
| C2364 | ECJ2FB1H104K | CAP,C .1UF-K-50V | |
| C2365 | ECJ2FB1H104K | CAP,C .1UF-K-50V | |
| C2365 | ECJ2VF1H104Z | CAP,C .1UF-Z-50V | |
| C2366 | EEUFC1E222E | CAP,E 2200UF-25V | |
| C2370 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C2371 | ECEA1CN100UB | CAP,E 10UF-16V | |
| C2372 | ECEA1CN100UB | CAP,E 10UF-16V | |
| C2373 | ECA1HM100B | CAP,E 10UF-50V | |
| C2374 | ECA1HM100B | CAP,E 10UF-50V | |
| C2375 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2376 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2377 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2378 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2404 | ECJ2VB1H223K | CAP,C .022UF-K-50V | |
| C2406 | ECJ2FB1H104K | CAP,C .1UF-K-50V | |
| C2408 | ECEA1CN100UB | CAP,E 10UF-16V | |
| C2410 | ECA1HM100B | CAP,E 10UF-50V | |
| C2414 | ECJ2VB1H223K | CAP,C .022UF-K-50V | |

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| C2416 | ECJ2FB1H104K | CAP,C .1UF-K-50V | |
| C2418 | ECEA1CN100UB | CAP,E 10UF-16V | |
| C2451 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2452 | ECJ2VB1H472K | CAP,C .0047UF-K-50V | |
| C2453 | ECJ2VB1H223K | CAP,C .022UF-K-50V | |
| C2454 | ECJ2VB1H332K | CAP,C .0033UF-K-50V | |
| C2455 | ECJ2FB1C684K | CAP,C .68UF-Z-16C | |
| C2456 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2457 | ECJ2VB1C104K | CAP,C .1UF-K-16V | |
| C2458 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2459 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2460 | ECJ2VB1H103K | CAP,C .01UF-K-50V | |
| C2461 | ECA1CM221B | CAP,E 10UF-16V | |
| C2462 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2463 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2464 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2465 | ECJ2VB1C104K | CAP,C .1UF-K-16V | |
| C2466 | ECJ2FB1C684K | CAP,C .68UF-Z-16C | |
| C2467 | ECJ2VB1H332K | CAP,C .0033UF-K-50V | |
| C2468 | ECJ2VB1H223K | CAP,C .022UF-K-50V | |
| C2469 | ECJ2VB1H472K | CAP,C .0047UF-K-50V | |
| C2470 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C2851 | ECA1EM471B | CAP,E 470UF-25V | |
| C2852 | ECA1CM221B | CAP,E 10UF-16V | |
| C2855 | ECA1EM471B | CAP,E 470UF-25V | |
| C2855 | ECA1VM221B | CAP,E 220UF-35V | |
| C2857 | EEUFC1C471B | CAP,E 470UF-16V | |
| C2859 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C2861 | ECA1CM471B | CAP,E 470UF-16V | |
| C2861 | EEUFC1A471B | CAP,E 470UF-10V | |
| C2862 | ECA1HM471E | CAP,E 470UF-50V | |
| C2862 | ECA1VM471B | CAP,E 470UF-35V | |
| C2865 | ECA1CM221B | CAP,E 10UF-16V | |
| C2865 | ECA1EM221B | CAP,E 220UF-25V | |
| C2867 | EEUFC1A471B | CAP,E 470UF-10V | |
| C2869 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C2870 | ECA1CM221B | CAP,E 10UF-16V | |
| C2870 | ECA1EM221B | CAP,E 220UF-25V | |
| C2872 | EEUFC1A471B | CAP,E 470UF-10V | |

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|---|---|---|---|
| C2874 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C2875 | ECA1CM471B | CAP,E 470UF-16V | |
| C2877 | EEUFC1A102B | CAP,E 1000UF-10V | |
| C2877 | EEUFC1A471B | CAP,E 470UF-10V | |
| C2879 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C2881 | ECJ2VB1H103K | CAP,C .01UF-K-50V | |
| C2882 | ECJ2VB1H103K | CAP,C .01UF-K-50V | |
| C2884 | ECA0JM222B | CAP,E 2200UF-6.3V | |
| C2891 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C2892 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C3331 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3332 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3333 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3334 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3335 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3336 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3337 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3338 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3339 | ECJ2VB1H103K | CAP,C .01UF-K-50V | |
| C3340 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3341 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3342 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3343 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3344 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3345 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3346 | ECJ2VB1H103K | CAP,C .01UF-K-50V | |
| C3347 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3348 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3349 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3350 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3351 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3352 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3353 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3354 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3355 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3357 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3358 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3359 | ECA1EM471E | CAP,E 470UF-25V | |
| C3360 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |

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|---|---|---|---|
| C3361 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3362 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3363 | ECJ2VF1C105Z | CAP,C 1.0UF-Z-16V | |
| C3364 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3365 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3366 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3367 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3368 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3369 | ECJ2YB1A105K | CAP,C 1.0UF-K-125V | |
| C3401 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3402 | ECJ2VB1H152K | CAP,C .0015UF-K-50V | |
| C3405 | ECA1HM010B | CAP,E 1UF-50V | |
| C3406 | ECA1HM010B | CAP,E 1UF-50V | |
| C3801 | ECA1CM101B | CAP,E 100UF-16V | |
| C3802 | ECA1VM470B | CAP,E 47UF-35V | |
| C3803 | ECJ2VF1H103Z | CAP,C .01UF-Z-50V | |
| C3804 | ECQE2104KF3 | CAP,P .10UF-K-200V | |
| C3805 | ECA2DM330B | CAP,E 33UF-200V | |
| C3806 | ECQE2474KF3 | CAP,P .47UF-K-200V | |
| C3807 | ECQE2474KF3 | CAP,P .47UF-K-200V | |
| C3808 | ECKC3D332KBN | CAP,C 3300PF-K-2KV | |
| C3809 | ECQE2474KF3 | CAP,P .47UF-K-200V | |
| C3811 | ECQE2103KF3 | CAP,P .010UF-K-200V | |
| C3812 | ECQE2104KF3 | CAP,P .10UF-K-200V | |
| C3813 | ECQE2104KF3 | CAP,P .10UF-K-200V | |
| C3814 | ECQE2104KF3 | CAP,P .10UF-K-200V | |
| C3815 | ECQE2103KF3 | CAP,P .010UF-K-200V | |
| C3816 | ECQE2103KF3 | CAP,P .010UF-K-200V | |
| C3817 | ECQE2103KF3 | CAP,P .010UF-K-200V | |
| C3825 | ECA2EM010B | CAP,E 1UF-250V | |
| C3826 | ECA1VM470B | CAP,E 47UF-35V | |
| C3827 | ECJ2VB1H103K | CAP,C .01UF-K-50V | |
| C3828 | ECJ2VB1H103K | CAP,C .01UF-K-50V | |
| C3829 | ECKR2H102KB5 | CAP,C 1000PF-K-500V | |
| C3830 | ECA2EM470E | CAP,E 47UF-250V | |
| C456A | ECJ2VB1H472K | CAP,C .0047UF-K-50V | |
| C468A | ECJ2VB1H272K | CAP,C .0027UF-K-50V | |
| C469A | ECJ2FB1H104K | CAP,C .1UF-K-50V | |
| C502A | ECJ2VF1H104Z | CAP,C .1UF-Z-50V | |

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| C503A | ECJ2VB1H102K | CAP,C .001UF-K-50V | |
| C5501 | ECEA1CN220UB | CAP,E 22UF-16V | |
| C5506 | ECJ2VB1C104K | CAP,C .1UF-K-16V | |
| C5507 | ECEA1CN220UB | CAP,E 22UF-16V | |
| C5801 | ECA1CM101B | CAP,E 100UF-16V | |
| C5803 | ECA1CM101B | CAP,E 100UF-16V | |
| C5804 | ECJ2VB1C104K | CAP,C .1UF-K-16V | |
| C5805 | ECA1VM470B | CAP,E 47UF-35V | |
| C5807 | ECQB1H104JF3 | CAP,P .10UF-J-50V | |
| C5808 | ECA1VM470B | CAP,E 47UF-35V | |
| DIODES | | | |
| D005 | MA3X152K0L | DIODE | |
| D009 | MA2C165001VT | DIODE | |
| D012 | MAZ40360MF | DIODE, ZENER | |
| D460 | MA2C165001VT | DIODE | |
| D461 | MA2C165001VT | DIODE | |
| D462 | MAZ40300MF | DIODE, ZENER | |
| D463 | MA2C165001VT | DIODE | |
| D465 | MAZ40390MF | DIODE, ZENER | |
| D466 | MA2C165001VT | DIODE | |
| D468 | MA2C165001VT | DIODE | |
| D469 | MAZ40300MF | DIODE, ZENER | |
| D470 | MA2C165001VT | DIODE | |
| D471 | MA2C700A0F | DIODE | |
| D501 | MAZ41500MF | DIODE, ZENER | |
| D502 | MAZ41500MF | DIODE, ZENER | |
| D503 | B0HALP000002 | DIODE, FAST RECOVERY | |
| D506 | B0JAME000058 | DIODE, SCHOTTKY BARRIER | |
| D507 | B0JAME000058 | DIODE, SCHOTTKY BARRIER | |
| D508 | B0HAGV000004 | DIODE, FAST RECOVERY | |
| D509 | MA2C165001VT | DIODE | |
| D510 | MAZ40820MF | DIODE, ZENER | ⚠ |
| D511 | B0EALV000001 | DIODE, RECTIFIER | |
| D513 | MAZ42700MF | DIODE, ZENER | |
| D516 | MAZ40390MF | DIODE, ZENER | |
| D517 | B0HALP000002 | DIODE, FAST RECOVERY | |
| D518 | MA2C165001VT | DIODE | |
| D519 | B0HALP000002 | DIODE, FAST RECOVERY | |

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|---|---|---|---|
| D521 | MAZ41800MF | DIODE, ZENER | |
| D522 | B0AAGR000002 | DIODE, SWITCHING | |
| D523 | FMRG5HSLF731 | DIODE | |
| D524 | MA2C165001VT | DIODE | |
| D525 | B0HALP000002 | DIODE, FAST RECOVERY | |
| D528 | B0HALP000002 | DIODE, FAST RECOVERY | |
| D532 | MA2C165001VT | DIODE | |
| D533 | MA2C700A0F | DIODE | |
| D534 | MA2C165001VT | DIODE | |
| D539 | MA2C165001VT | DIODE | |
| D540 | B0HALP000002 | DIODE, FAST RECOVERY | |
| D541 | B0JAME000058 | DIODE, SCHOTTKY BARRIER | |
| D542 | B0HACW000002 | DIODE, FAST RECOVERY | |
| D542 | B0JAME000058 | DIODE, SCHOTTKY BARRIER | |
| D543 | MA2C165001VT | DIODE | |
| D544 | B0AAGR000002 | DIODE, SWITCHING | |
| D545 | B0AAGR000002 | DIODE, SWITCHING | |
| D549 | MA2C165001VT | DIODE | |
| D556 | B0HAHM000008 | DIODE, FAST RECOVERY | |
| D584 | MA2C165001VT | DIODE | |
| D701 | MA2C029TAF | DIODE | |
| D702 | MA2C029TAF | DIODE | |
| D801 | B0FBAT000005 | DIODE, RECTIFIER | ⚠ |
| D803 | D4DDF1R50001 | DIODE | ⚠ |
| D804 | B0EAKL000008 | DIODE, RECTIFIER | |
| D805 | B0EAKL000008 | DIODE, RECTIFIER | |
| D807 | MA2C165001VT | DIODE | |
| D809 | ERZV10D391 | VARISTOR, SURGE ABSORBER | ⚠ |
| D811 | B0EAKL000008 | DIODE, RECTIFIER | |
| D814 | MA2C165001VT | DIODE | |
| D815 | MA2C165001VT | DIODE | |
| D816 | MA2C165001VT | DIODE | |
| D817 | MAZ42200LF | DIODE, ZENER | |
| D819 | MA2C165001VT | DIODE | |
| D820 | AU01ZV0 | DIODE | |
| D821 | AU01ZV0 | DIODE | |
| D822 | B0HAMM000036 | DIODE, FAST RECOVERY | |
| D823 | MAZ406800F | DIODE, ZENER | |

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|---|---|---|---|
| D824 | B0BA01000046 | DIODE, VOLTAGE REGULATION | |
| D825 | B0HANR000003 | DIODE, FAST RECOVERY | |
| D827 | B0HANM000016 | DIODE, FAST RECOVERY | |
| D828 | MA3D690 | DIODE | |
| D829 | S2L20UF04P12 | DIODE | |
| D830 | MA3D690 | DIODE | |
| D831 | MAZ41300MF | DIODE, ZENER | |
| D832 | MAZ41100HF | DIODE, ZENER | |
| D832 | MAZ41500MF | DIODE, ZENER | |
| D833 | MA2C165001VT | DIODE | |
| D834 | MAZ40360MF | DIODE, ZENER | |
| D835 | MA2C165001VT | DIODE | |
| D836 | MAZ41600MF | DIODE, ZENER | |
| D837 | B0HAGV000004 | DIODE, FAST RECOVERY | |
| D844 | MA2C165001VT | DIODE | |
| D845 | MAZ41500MF | DIODE, ZENER | |
| D850 | MA2C165001VT | DIODE | |
| D857 | MA2C165001VT | DIODE | |
| D859 | MA2C165001VT | DIODE | |
| D861 | AU02ZV0 | DIODE | |
| D862 | MA2C165001VT | DIODE | |
| D863 | MAZ43300MF | DIODE, ZENER | |
| D866 | B0EAKT000018 | DIODE, RECTIFIER | |
| D867 | MA2C165001VT | DIODE | |
| D870 | B0HANM000016 | DIODE, FAST RECOVERY | |
| D875 | MA3D690 | DIODE | |
| D876 | B0JCME000025 | DIODE, SCHOTTKY BARRIER | |
| D1001 | LN81RPH | DIODE | |
| D1051 | MA2C165001VT | DIODE | |
| D1052 | MA2C165001VT | DIODE | |
| D1401 | MA3X152E0L | DIODE | |
| D1503 | MA3X152K0L | DIODE | |
| D1550 | MA2C700A0F | DIODE | |
| D1555 | B0EAKL000008 | DIODE, RECTIFIER | |
| D1560 | MAZ40360MF | DIODE, ZENER | |
| D2301 | MAZ42700MF | DIODE, ZENER | |
| D2302 | MA3X152K0L | DIODE | |
| D2303 | MA2C16700E | DIODE | |
| D2305 | MA3X152K0L | DIODE | |

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| D2307 | MA2C16700E | DIODE | |
| D2308 | MAZ42700MF | DIODE, ZENER | |
| D2325 | MA3X152K0L | DIODE | |
| D2351 | MA2C16700E | DIODE | |
| D2852 | B0JCME000025 | DIODE, SCHOTTKY BARRIER | |
| D2856 | B0JCME000025 | DIODE, SCHOTTKY BARRIER | |
| D2858 | B0JCME000025 | DIODE, SCHOTTKY BARRIER | |
| D2860 | B0JCME000025 | DIODE, SCHOTTKY BARRIER | |
| D2861 | B0JAME000058 | DIODE, SCHOTTKY BARRIER | |
| D2862 | B0JCME000025 | DIODE, SCHOTTKY BARRIER | |
| D2881 | MA2C165001VT | DIODE | |
| D2882 | MA2C165001VT | DIODE | |
| D2883 | MA2C165001VT | DIODE | |
| D2884 | MA2C165001VT | DIODE | |
| D3301 | MAZ31100ML | DIODE, ZENER | |
| D3302 | MAZ31100ML | DIODE, ZENER | |
| D3304 | MAZ31100ML | DIODE, ZENER | |
| D3306 | MAZ31100ML | DIODE, ZENER | |
| D3307 | MAZ31100ML | DIODE, ZENER | |
| D3308 | MAZ31100ML | DIODE, ZENER | |
| D3309 | MAZ31100ML | DIODE, ZENER | |
| D3310 | MAZ31100ML | DIODE, ZENER | |
| D3312 | MAZ31100ML | DIODE, ZENER | |
| D3314 | MAZ31100ML | DIODE, ZENER | |
| D3316 | MAZ31100ML | DIODE, ZENER | |
| D3317 | MAZ31100ML | DIODE, ZENER | |
| D3318 | MAZ31100ML | DIODE, ZENER | |
| D3319 | MAZ31100ML | DIODE, ZENER | |
| D3320 | MAZ31100ML | DIODE, ZENER | |
| D3321 | MAZ31100ML | DIODE, ZENER | |
| D3322 | MAZ31100ML | DIODE, ZENER | |
| D3323 | MAZ31100ML | DIODE, ZENER | |
| D3324 | MAZ31100ML | DIODE, ZENER | |
| D3325 | MAZ31100ML | DIODE, ZENER | |
| D3326 | MAZ31100ML | DIODE, ZENER | |
| D3328 | MAZ31100ML | DIODE, ZENER | |
| D3329 | MAZ31100ML | DIODE, ZENER | |
| D3330 | MAZ31100ML | DIODE, ZENER | |
| D3332 | CVS20A120MTA | DIODE | |

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|---|---|---|---|
| D3334 | CVS20A120MTA | DIODE | ⚠ |
| D3335 | MAZ31100ML | DIODE, ZENER | |
| D3336 | MAZ31100ML | DIODE, ZENER | |
| D3403 | MAZ31100ML | DIODE, ZENER | |
| D3404 | MAZ31100ML | DIODE, ZENER | |
| D3405 | MAZ31100ML | DIODE, ZENER | |
| D3406 | MAZ31100ML | DIODE, ZENER | |
| D3407 | MAZ31100ML | DIODE, ZENER | |
| D3408 | MAZ31100ML | DIODE, ZENER | |
| D3409 | MAZ31100ML | DIODE, ZENER | |
| D3410 | MAZ31100ML | DIODE, ZENER | |
| D3801 | MAZ40620L3TV | DIODE, ZENER | |
| D3805 | MA2C18800E | DIODE | |
| D3807 | MA2C18800E | DIODE | |
| D3812 | MAZ41300MF | DIODE, ZENER | |
| D3813 | B0HAGP000003 | DIODE, FAST RECOVERY | |
| D3816 | MA2C18800E | DIODE | |
| D3817 | MA2C18800E | DIODE | |
| D3819 | MA2C0290AF | DIODE | |
| D3820 | MA2C0290AF | DIODE | |
| D3821 | MA2C0290AF | DIODE | |
| D3823 | B0HALP000002 | DIODE, FAST RECOVERY | |
| D3824 | B0HAGP000003 | DIODE, FAST RECOVERY | |
| D3831 | B0HALP000002 | DIODE, FAST RECOVERY | |
| D3833 | B0HALP000002 | DIODE, FAST RECOVERY | |
| D3834 | MA2C18800E | DIODE | |
| D3835 | MA2C18800E | DIODE | |
| D3836 | MA2C18800E | DIODE | |
| D3837 | MA2C18800E | DIODE | |
| D3838 | MA2C18800E | DIODE | |
| D3839 | MA2C18800E | DIODE | |
| D3844 | ERZV07D361 | VARISTOR, SURGE ABSORBER | |
| D3850 | MA2C18800E | DIODE | |
| FUSES | | | |
| F801 | XBA2A00101 | FUSE 6.3A 125V | ⚠ |
| INTEGRATED CIRCUITS | | | |
| IC002 | TVR2AJ202S | EEPROM | |
| IC006 | C1AB00000441 | INT. CKT. | |

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|---|---|---|---|
| IC451 | C1AA00000665 | INT CKT | |
| IC500 | C0AABB000107 | IC (OPERATIONAL AMPLIFIER) | |
| IC501 | AN1431T-TA | INT CKT | |
| IC502 | AN5751N | INT CKT | |
| IC503 | 0N3171R | INT CKT | |
| IC504 | 0N3171R | INT CKT | |
| IC507 | AN6914 | INT CKT | |
| IC801 | C5HABZZ00126 | INT CKT | |
| IC802 | C0EAS0000024 | IC (VOLTAGE DETECTING) | |
| IC804 | B0EBKM000016 | DIODE, RECTIFIER | |
| IC805 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC811 | 0N3171R | INT CKT | ⚠ |
| IC1401 | C0BBBA000043 | IC (COMPARATOR) | |
| IC1501 | C0BBBA000043 | IC (COMPARATOR) | |
| IC1502 | C0ABBA000073 | IC (OPERATIONAL AMPLIFIER) | |
| IC1503 | C0BBBA000043 | IC (COMPARATOR) | |
| IC2201 | AN5849S-E1V | INT CKT | |
| IC2301 | C1AA00000645 | INT CKT | |
| IC2303 | C0BBBA000043 | IC (COMPARATOR) | |
| IC2305 | C0ABBA000073 | IC (OPERATIONAL AMPLIFIER) | |
| IC2451 | NJW1164MPTE1 | INT. CKT. | |
| IC2851 | C0CACKG00003 | IC (VOLTAGE REGULATOR) | |
| IC2852 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC2854 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC2855 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC2856 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC2857 | C0DAAZG00011 | IC (FOR POWER SUPPLY) | |
| IC3801 | C1AA00000662 | INT CKT | |
| IC5801 | AN15530B | INT CKT | |
| IC5802 | C0AABB000107 | IC (OPERATIONAL AMPLIFIER) | |
| COILS | | | |
| L002 | ELESN330JA | COIL, PEAKING 33UH | |
| L009 | ELELN330KA | COIL, PEAKING 33UH | |
| L011 | ELELN330KA | COIL, PEAKING 33UH | |
| L452 | EXCELDR35V | FERRITE BEAD | |
| L453 | ELC18B152L | COIL, CHOKE | |
| L454 | EXCELSA35T | FERRITE BEAD | |
| L501 | EXCELSA24T | FERRITE BEAD | |

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|---|---|---|---|
| L502 | EXCELSA24T | FERRITE BEAD | |
| L503 | ELC12D103E | COIL, CHOKE | |
| L504 | EXCELSA26T | FERRITE BEAD | |
| L505 | EXCELSA26T | FERRITE BEAD | |
| L506 | EXCELSA24T | FERRITE BEAD | |
| L509 | ELC09D100F | COIL, CHOKE 10UH | |
| L510 | ELC12D103E | COIL, CHOKE | |
| L514 | EXCELSA35T | FERRITE BEAD | |
| L515 | ELC09D471F | COIL, CHOKE 470UH | |
| L516 | ELC09D101DF | COIL, CHOKE 100UH | |
| L516 | ELC09D101F | COIL, CHOKE 100UH | |
| L553 | EXCELSA35T | FERRITE BEAD | |
| L554 | ELH5L8115 | COIL, LINEARITY | |
| L561 | ELC16B182L | COIL, CHOKE | |
| L812 | EXCELSA39V | FERRITE BEAD | |
| L813 | EXCELSA39V | FERRITE BEAD | |
| L816 | EXCELSA39E | FERRITE BEAD | |
| L817 | EXCELSA24T | FERRITE BEAD | |
| L818 | EXCELSA24T | FERRITE BEAD | |
| L819 | EXCELDR35V | FERRITE BEAD | |
| L821 | EXCELSA39E | FERRITE BEAD | |
| L823 | TLUADTB820K | COIL | |
| L824 | EXCELDR35V | FERRITE BEAD | |
| L825 | ELC09D470DF | COIL, CHOKE 47UH | |
| L826 | ELC09D101DF | COIL, CHOKE 100UH | |
| L827 | ELC09D101DF | COIL, CHOKE 100UH | |
| L829 | EXCELDR25V | FERRITE BEAD | |
| L830 | EXCELDR35V | FERRITE BEAD | |
| L831 | EXCELDR35V | FERRITE BEAD | |
| L836 | EXCELDR35V | FERRITE BEAD | |
| L845 | G0A101ZA0041 | COIL, LINE CHOKE | |
| L846 | ELC09D220DF | COIL, CHOKE 22UH | |
| L901 | TALV35VB100J | COIL | |
| L903 | EXCELSA35T | FERRITE BEAD | |
| L904 | EXCELSA35T | FERRITE BEAD | |
| L906 | TALV35VB330J | COIL | |
| L2201 | ELESN100JA | COIL, PEAKING 10UH | |
| L2304 | ELC12E390 | COIL, CHOKE 39UH | |
| L2305 | ELC12E390 | COIL, CHOKE 39UH | |

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|---|---|---|---|
| L2306 | EXCELDR35V | FERRITE BEAD | |
| L2307 | EXCELDR35V | FERRITE BEAD | |
| L2341 | G0A330G00010 | COIL, LINE CHOKE | |
| L2342 | G0A330G00010 | COIL, LINE CHOKE | |
| L2854 | G0A101ZA0041 | COIL, LINE CHOKE | |
| L2855 | G0A220GA0002 | COIL, LINE CHOKE | |
| L2860 | G0A470ZA0041 | COIL, LINE CHOKE | |
| L2863 | G0A470ZA0041 | COIL, LINE CHOKE | |
| L2866 | G0A470ZA0041 | COIL, LINE CHOKE | |
| L2868 | G0A470ZA0041 | COIL, LINE CHOKE | |
| L2869 | G0A470ZA0041 | COIL, LINE CHOKE | |
| L3303 | G0BYYYY00016 | TRANSFORMER | |
| L3304 | G0BYYYY00016 | TRANSFORMER | |
| L3401 | G0BYYYY00016 | TRANSFORMER | |
| L3403 | EXCELSA35T | FERRITE BEAD | |
| L3801 | TALV35VB2R2J | COIL | |
| L3802 | TALV35VB2R2J | COIL | |
| L3803 | TALV35VB2R2J | COIL | |
| L3804 | EXCELSA24T | FERRITE BEAD | |
| L3806 | EXCELDR35V | FERRITE BEAD | |
| L3807 | EXCELDR35V | FERRITE BEAD | |
| L3812 | EXCELDR35V | FERRITE BEAD | |
| L3813 | EXCELDR35V | FERRITE BEAD | |
| L3825 | EXCELSA24T | FERRITE BEAD | |
| L3826 | EXCELSA35T | FERRITE BEAD | |
| L3830 | EXCELSA24T | FERRITE BEAD | |
| L552A | ELH5L7740 | COIL, LINEARITY | |
| LF801 | G0B650H00002 | COIL | ⚠ |
| LF802 | G0B650H00002 | COIL | ⚠ |
| LF803 | G0B650H00002 | COIL | ⚠ |
| TRANSISTORS | | | |
| Q002 | UNR221100L | TRANSISTOR | |
| Q003 | UNR211500L | TRANSISTOR | |
| Q013 | 2PD601AR-115 | TRANSISTOR | |
| Q404 | 2PD601AR-115 | TRANSISTOR | |
| Q405 | 2PD601AR-115 | TRANSISTOR | |
| Q406 | 2PD601AR-115 | TRANSISTOR | |
| Q459 | 2SC1473AR | TRANSISTOR | |

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|---|---|---|---|
| Q501 | B1CEML000001 | TRANSISTOR | |
| Q511 | 2PB709AR-115 | TRANSISTOR | |
| Q512 | 2PD601AR-115 | TRANSISTOR | |
| Q513 | 2PD601AR-115 | TRANSISTOR | |
| Q514 | 2PD601AR-115 | TRANSISTOR | |
| Q515 | 2PB709AR-115 | TRANSISTOR | |
| Q516 | 2PD601AR-115 | TRANSISTOR | |
| Q517 | 2PB709AR-115 | TRANSISTOR | |
| Q551 | 2SC5686000LK | TRANSISTOR | |
| Q556 | B1DAFU000002 | TRANSISTOR | |
| Q560 | B1DGDN000001 | TRANSISTOR | |
| Q561 | B1DEDQ000009 | TRANSISTOR | |
| Q562 | 2SK2538000LB | TRANSISTOR | |
| Q563 | B1BAAT000001 | TRANSISTOR | |
| Q564 | 2SC1685QRSTA | TRANSISTOR | |
| Q565 | 2SC3311ASTA | TRANSISTOR | |
| Q566 | 2SC3311ASTA | TRANSISTOR | |
| Q701 | B1DEDP000003 | TRANSISTOR | |
| Q702 | 2PD601AR-115 | TRANSISTOR | |
| Q703 | 2PD601AR-115 | TRANSISTOR | |
| Q704 | 2PB709AR-115 | TRANSISTOR | |
| Q802 | 2SC1685QRSTA | TRANSISTOR | |
| Q803 | 2SC1685QRSTA | TRANSISTOR | |
| Q804 | UNR221100L | TRANSISTOR | |
| Q815 | 2PD601AR-115 | TRANSISTOR | |
| Q816 | 2PD601AR-115 | TRANSISTOR | |
| Q820 | 2SD2177RTA | TRANSISTOR | |
| Q821 | 2SB14340RA | TRANSISTOR | |
| Q822 | 2SA1309ATA | TRANSISTOR | |
| Q823 | 2PD601AR-115 | TRANSISTOR | |
| Q824 | 2SA1309ATA | TRANSISTOR | |
| Q825 | 2PD601AR-115 | TRANSISTOR | |
| Q826 | 2PD601AR-115 | TRANSISTOR | |
| Q827 | 2SB1011RL | TRANSISTOR | |
| Q831 | 2SA1309ATA | TRANSISTOR | |
| Q900 | 2PD601AR-115 | TRANSISTOR | |
| Q901 | 2PD601AR-115 | TRANSISTOR | |
| Q903 | 2PD601AR-115 | TRANSISTOR | |
| Q904 | 2PB709AR-115 | TRANSISTOR | |

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|---|---|---|---|
| Q905 | 2PD601AR-115 | TRANSISTOR | |
| Q906 | 2SD592A | TRANSISTOR | |
| Q907 | 2SB621ATA | TRANSISTOR | |
| Q908 | B1BCBL000018 | TRANSISTOR | |
| Q909 | B1BABL000016 | TRANSISTOR | |
| Q910 | 2PB709AR-115 | TRANSISTOR | |
| Q911 | 2PD601AR-115 | TRANSISTOR | |
| Q912 | 2SC3311ASTA | TRANSISTOR | |
| Q913 | 2SA1309ASTA | TRANSISTOR | |
| Q1401 | 2PD601AR-115 | TRANSISTOR | |
| Q1501 | 2PD601AR-115 | TRANSISTOR | |
| Q1502 | 2PB709AR-115 | TRANSISTOR | |
| Q1504 | 2PD601AR-115 | TRANSISTOR | |
| Q1505 | 2PB709AR-115 | TRANSISTOR | |
| Q1511 | 2PD601AR-115 | TRANSISTOR | |
| Q1512 | 2PB709AR-115 | TRANSISTOR | |
| Q2301 | 2PD601AR-115 | TRANSISTOR | |
| Q2301 | UNR221600L | TRANSISTOR | |
| Q2302 | 2PD601AR-115 | TRANSISTOR | |
| Q2303 | UNR211500L | TRANSISTOR | |
| Q2304 | 2PD601AR-115 | TRANSISTOR | |
| Q2304 | UNR221600L | TRANSISTOR | |
| Q2305 | 2PD601AR-115 | TRANSISTOR | |
| Q2306 | 2PB709AR-115 | TRANSISTOR | |
| Q2307 | UNR211500L | TRANSISTOR | |
| Q2308 | 2PD601AR-115 | TRANSISTOR | |
| Q2310 | 2PB709AR-115 | TRANSISTOR | |
| Q2311 | 2PB709AR-115 | TRANSISTOR | |
| Q2313 | UNR221100L | TRANSISTOR | |
| Q2314 | 2PD601AR-115 | TRANSISTOR | |
| Q2314 | UNR221600L | TRANSISTOR | |
| Q2317 | UNR221600L | TRANSISTOR | |
| Q2318 | UNR221600L | TRANSISTOR | |
| Q2325 | 2PD601AR-115 | TRANSISTOR | |
| Q2327 | 2PD601AR-115 | TRANSISTOR | |
| Q2451 | 2PD601AR-115 | TRANSISTOR | |
| Q2452 | 2PD601AR-115 | TRANSISTOR | |
| Q2881 | UNR211D00L | TRANSISTOR | |
| Q2893 | UNR211500L | TRANSISTOR | |

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| Q3801 | 2SA1767Q | TRANSISTOR | |
| Q3802 | 2SA1767Q | TRANSISTOR | |
| Q3803 | 2SA1767Q | TRANSISTOR | |
| Q3804 | 2SC58630QL | TRANSISTOR | |
| Q3805 | 2SC58630QL | TRANSISTOR | |
| Q3806 | 2SC58630QL | TRANSISTOR | |
| Q3807 | B1BABL000016 | TRANSISTOR | |
| Q3808 | 2SC2258RL | TRANSISTOR | |
| Q3809 | 2PB709AR-115 | TRANSISTOR | |
| Q3810 | 2PB709AR-115 | TRANSISTOR | |
| Q3811 | 2PB709AR-115 | TRANSISTOR | |
| Q3812 | 2PD601AR-115 | TRANSISTOR | |
| Q3813 | 2PD601AR-115 | TRANSISTOR | |
| Q3814 | 2PD601AR-115 | TRANSISTOR | |
| RELAYS | | | |
| RL801 | K6B1AGA00043 | RELAY | ⚠ |
| RL802 | TSE10814 | RELAY | ⚠ |
| RL803 | K6B1AGA00042 | RELAY | ⚠ |
| RL804 | TSEH0034 | RELAY | |
| RESISTORS | | | |
| R032 | ERJ6GEYJ333V | RES,M 33K-J-1/10W | |
| R041 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W | |
| R075 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R076 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R077 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R096 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R098 | ERJ6GEYJ220V | RES,M 22-J-1/10W | |
| R099 | ERJ6GEYJ220V | RES,M 22-J-1/10W | |
| R100 | ERJ6GEYJ242V | RES,M 2.4K-J-1/10W | |
| R101 | ERJ6GEYJ392V | RES,M 3.9K-J-1/10W | |
| R102 | ERJ6GEYJ682V | RES,M 6.8K-J-1/10W | |
| R103 | ERJ6GEYJ822V | RES,M 8.2K-J-1/10W | |
| R104 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R106 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R107 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R108 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R109 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R121 | ERDS1VJ680T | RES, C 68-J-1/2W | |

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|---|---|---|---|
| R121 | ERDS2TJ680T | RES,C 68-J-1/4W | |
| R122 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R123 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R124 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R125 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R126 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R127 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R129 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R451 | EROS2THF1201 | RES,M 1.2K-F-1/4W | |
| R452 | EROS2THF2201 | RES,M 2.2K-F-1/4W | |
| R453 | ERJ6GEYJ822V | RES,M 8.2K-J-1/10W | |
| R454 | ERJ6ENF2702V | RES,M 27K-F-1/10W | |
| R455 | ERG2FJ331H | RES,M 330-J-2W | |
| R456 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R457 | ERDS1FJ560T | RES,C 56-J-1/2W | |
| R458 | ERDS1FJ4R7P | RES,C 4.7-J-1/2W | |
| R459 | ERDS1FJ4R7P | RES,C 4.7-J-1/2W | |
| R461 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W | |
| R462 | ERJ6GEYJ563V | RES,M 56K-J-1/10W | |
| R463 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R464 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R465 | ERJ6GEYJ224V | RES,M 220K-J-1/10W | |
| R466 | ERDS1FJ4R7P | RES,C 4.7-J-1/2W | |
| R467 | ERDS1FJ4R7P | RES,C 4.7-J-1/2W | |
| R468 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W | |
| R469 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R470 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W | |
| R471 | ERJ6ENF1802V | RES,M 18K-F-1/10W | |
| R472 | ERJ6ENF1501V | RES,M 1.5K-F-1/10W | |
| R473 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W | |
| R474 | ERJ6GEYJ563V | RES,M 56K-J-1/10W | |
| R475 | ERJ6GEYJ224V | RES,M 220K-J-1/10W | |
| R476 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R501 | ERDS2TJ104T | RES,C 100K-J-1/4W | |
| R502 | ERG2FJ390H | RES,M 39-J-2W | |
| R503 | ERG3FJ221H | RES,M 220-J-3W | |
| R504 | ERDS2TJ680T | RES,C 68-J-1/4W | |
| R505 | ERG1SJ102P | RES,M 1K-J-1W | |
| R507 | ERX2FJR22H | RES,M .22-J-2W | |

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|---|---|---|---|
| R510 | ERG3FJ561H | RES,M 560-J-3W | |
| R512 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R513 | ERDS2TJ471T | RES,C 470-J-1/4W | |
| R514 | EROS2THF2102 | RES,M 21K-F-1/4W | ⚠ |
| R515 | EROS2THF2102 | RES,M 21K-F-1/4W | ⚠ |
| R516 | ERDS2TJ101T | RES,C 100-J-1/4W | ⚠ |
| R517 | ERC14GK103V | RES,M 10K-J-1W | |
| R518 | ERDS2TJ103T | RES,C 10K-J-1/4W | |
| R519 | ERDS2TJ221T | RES,C 220-J-1/4W | |
| R520 | EROS2THF2102 | RES,M 21K-F-1/4W | ⚠ |
| R521 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R522 | ERJ6GEYJ392V | RES,M 3.9K-J-1/10W | |
| R523 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R524 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R525 | ERJ6GEYJ182V | RES,M 1.8K-J-1/10W | |
| R526 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R527 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R528 | ERDS2TJ473T | RES,C 47K-J-1/4W | |
| R529 | ERDS2TJ473T | RES,C 47K-J-1/4W | |
| R530 | ERJ6GEYJ183V | RES,M 18K-J-1/10W | |
| R531 | ERDS2TJ221T | RES,C 220-J-1/4W | |
| R533 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R534 | ERDS2TJ152T | RES,C 1.5K-J-1/4W | |
| R535 | ERDS2TJ472T | RES,C 4.7K-J-1/4W | |
| R536 | ERDS2TJ221T | RES,C 220-J-1/4W | |
| R537 | ERDS2TJ103T | RES,C 10K-J-1/4W | |
| R538 | ERDS2TJ472T | RES,C 4.7K-J-1/4W | |
| R540 | ERC14GK334V | RES,C 330K-K-1/4W | |
| R541 | ERDS2TJ101T | RES,C 100-J-1/4W | |
| R542 | ERDS2TJ103T | RES,C 10K-J-1/4W | |
| R543 | ERDS2TJ103T | RES,C 10K-J-1/4W | |
| R547 | ERG1SJ392P | RES,M 3.9K-J-1W | |
| R548 | ERG3FJ202H | RES,M 2K-J-3W | |
| R549 | ERG3FJ152H | RES,M 1.5K-J-3W | |
| R550 | ERDS2TJ471T | RES,C 470-J-1/4W | |
| R551 | ERC14GK184V | RES,C 180K-K-1/4 | |
| R552 | ERC14GK224V | RES,C 220K-K-1/4W | |
| R553 | ERDS2TJ101T | RES,C 100-J-1/4W | |

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|---|---|---|---|
| R554 | ERDS2TJ473T | RES,C 47K-J-1/4W | |
| R557 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R558 | ERDS2TJ332T | RES,C 3.3K-J-1/4W | |
| R558 | ERDS2TJ473T | RES,C 47K-J-1/4W | |
| R559 | ERC12GK104V | RES,C 100K-K-1/2W | |
| R560 | ERC12GK225V | RES,C 2.2M-K-1/2W | |
| R560 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R561 | EROS2THF2102 | RES,M 21K-F-1/4W | ⚠ |
| R562 | ERDS2TJ133T | RES,C 13K-J-1/4W | |
| R562 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R563 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R563 | ERG2FJ123H | RES,M 12K-J-2W | |
| R564 | ERDS2TJ101T | RES,C 100-J-1/4W | |
| R565 | ERDS2TJ560T | RES,C 56-J-1/4W | |
| R566 | ERDS2TJ101T | RES,C 100-J-1/4W | |
| R568 | ERDS2TJ473T | RES,C 47K-J-1/4W | |
| R568 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R569 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R570 | ERDS2TJ103T | RES,C 10K-J-1/4W | |
| R572 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R573 | ERC14GK101V | RES,C 100-K-1/4W | |
| R574 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R575 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R576 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R577 | EROS2THF2703 | RES,M 270K-F-1/4W | |
| R578 | ERJ6GEYJ331V | RES,M 330-J-1/10W | |
| R579 | ERDS2TJ392T | RES,C 3.9K-J-1/4W | |
| R580 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R581 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R582 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R583 | ERJ6ENF1501V | RES,M 1.5K-F-1/10W | |
| R584 | ERJ6ENF2201V | RES,M 2.2K-F-1/10W | |
| R586 | EROS2THF2003 | RES,M 200K-F-1/4W | |
| R587 | ERJ6GEYJ681V | RES,M 680-J-1/10W | |
| R589 | ERJ6GEYJ392V | RES,M 3.9K-J-1/10W | |
| R590 | ERJ6GEYJ331V | RES,M 330-J-1/10W | |
| R591 | ERDS2TJ100T | RES,C 10-J-1/4W | |
| R592 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W | |

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| R593 | ERJ6GEYJ152V | RES,M 1.5K-J-1/10W | |
| R594 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W | |
| R595 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R597 | ERF5AJ680 | RES,W 68-J-5W | |
| R598 | ERX12SJR22P | RES,M .22-J-1/2W | |
| R598 | ERX12SJR27P | RES,M .27-J-1/2W | |
| R599 | ERX12SJR27P | RES,M .27-J-1/2W | |
| R599 | ERX12SZJR15P | RES,M .15-J-1/2W | |
| R701 | ERQ14AJ220P | RES,F 22-J-1/4W | |
| R702 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R703 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R704 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R705 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R718 | ERG2FJ223H | RESM 22K-J-2W | |
| R732 | EROS2THF6342 | RES,M 63.4K-F-1/4W | |
| R733 | EROS2THF6342 | RES,M 63.4K-F-1/4W | |
| R734 | EROS2THF1542 | RES,M 15.4KF-1/4W | |
| R735 | ERDS1FJ220P | RES,C 22-F-1/2W | |
| R736 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R784 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R785 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R786 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R787 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R800 | ERU5TCK1R5T | RES,F 1.5-K-5W | ⚠ |
| R801 | ERC14GK824V | RES,C 820K-K-1/4W | |
| R802 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R803 | ERDS2TJ680T | RES,C 68-J-1/4W | |
| R804 | ERDS2TJ331T | RES,C 330-J-1/4W | |
| R805 | ERDS2TJ473T | RES,C 47K-J-1/4W | |
| R806 | ERDS2TJ473T | RES,C 47K-J-1/4W | |
| R807 | ERDS2TJ820T | RES,C 82-J-1/4W | |
| R808 | ERDS2TJ680T | RES,C 68-J-1/4W | |
| R809 | ERDS2TJ472T | RES,C 4.7K-J-1/4W | |
| R810 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R811 | ERDS2TJ472T | RES,C 4.7K-J-1/4W | |
| R812 | ERDS2TJ473T | RES,C 47K-J-1/4W | |
| R814 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R815 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |

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| R815 | ERJ6GEYJ333V | RES,M 33K-J-1/10W | |
| R816 | ERD75TAJ825 | RES,C 8.2MEG-J-3/4W | ⚠ |
| R816 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R817 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R818 | ERDS2TJ222T | RES,C 2.2K-J-1/4W | |
| R819 | ERDS2TJ101T | RES,C 100-J-1/4W | |
| R819 | ERDS2TJ391T | RES,C 390-J-1/4W | |
| R820 | ERJ6GEYJ122V | RES,M 1.2K-J-1/10W | |
| R830 | ERDS1FJ330T | RES,C 30-J-1/2W | |
| R831 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R832 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R833 | ERJ6GEYJ470V | RES,M 47-J-1/10W | |
| R834 | ERDS2TJ473T | RES,C 47K-J-1/4W | |
| R835 | ERJ6GEYJ392V | RES,M 3.9K-J-1/10W | |
| R840 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R841 | ERQ12HKR22P | RES,F .22-K-1/2W | |
| R842 | ERQ12HKR22P | RES,F .22-K-1/2W | |
| R844 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R845 | ERDS1FJ222T | RES,C 2200-J-1/2W | |
| R846 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R847 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R848 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R849 | ERDS2TJ223T | RES,C 22K-J-1/4W | |
| R849 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R850 | ERDS2TJ152T | RES,C 1.5K-J-1/4W | |
| R851 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R852 | ER050PHF2702 | RES,M 27-F-1/2W | |
| R853 | EROS2THF3601 | RES,M 3.6K-F-1/4W | |
| R855 | ERDS2TJ683T | RES,C 68K-J-1/4W | |
| R856 | ERJ6GEYJ123V | RES,M 12K-J-1/10W | |
| R857 | ERX1SJ1R2P | RES,M 1.2-J-1W | |
| R858 | ERX1SJ1R2P | RES,M 1.2-J-1W | |
| R859 | ERDS2TJ272T | RES,C 2.7K-J-1/4W | |
| R860 | ERG1SJ102P | RES,M 1K-J-1W | |
| R861 | ERX12SJR27P | RES,M .27-J-1/2W | |
| R862 | ERX12SJR27P | RES,M .27-J-1/2W | |
| R863 | ERX12SJR27P | RES,M .27-J-1/2W | |
| R864 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |

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| R865 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W | |
| R866 | ERJ6GEYJ561V | RES,M 560-J-1/10W | |
| R867 | ERJ6GEYJ122V | RES,M 1.2K-J-1/10W | |
| R868 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R869 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W | |
| R870 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R872 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R872 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R873 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R874 | ERDS1FJ390T | RES,C 39-J-1/2W | |
| R875 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W | |
| R876 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R878 | ERDS2TJ223T | RES,C 22K-J-1/4W | |
| R879 | ERJ6ENF6801V | RES,M 6.8K-F-1/10W | |
| R882 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R884 | ERX1SJ1R8P | RES,M 1.8-J-1W | |
| R886 | ERDS2TJ272T | RES,C 2.7K-J-1/4W | |
| R886 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W | |
| R887 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R888 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R889 | ERJ6GEYJ272V | RES,M 2.7K-J-1/10W | |
| R890 | ERDS2TJ152T | RES,C 1.5K-J-1/4W | |
| R891 | ERG1SJ823P | RES,M 82K-J-1W | |
| R892 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R893 | ERDS1FJ332T | RES,C 3.3K-F-1/2W | |
| R894 | ERJ6ENF1801V | RES,M 1.8K-F-1/10W | |
| R896 | ERDS1TJ334T | RES,C 330K-J-1/2W | |
| R898 | ERJ6GEYJ563V | RES,M 56K-J-1/10W | |
| R899 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R900 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R901 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R902 | ERJ6GEYJ682V | RES,M 6.8K-J-1/10W | |
| R903 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R904 | ERJ6GEYJ392V | RES,M 3.9K-J-1/10W | |
| R906 | ERJ6GEYJ333V | RES,M 33K-J-1/10W | |
| R907 | ERJ6GEYJ681V | RES,M 680-J-1/10W | |
| R908 | ERJ6GEYJ151V | RES,M 150-J-1/10W | |
| R912 | ERDS2TJ681T | RES,C 680-J-1/4W | |
| R915 | ERDS2TJ221T | RES,C 220-J-1/4W | |

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| R916 | ERDS2TJ221T | RES,C 220-J-1/4W | |
| R917 | ERQ14AJ100P | RES,F 10-J-1/4W | |
| R924 | ERDS2TJ561T | RES,C 560-J-1/4W | |
| R925 | ERDS2TJ683T | RES,C 68K-J-1/4W | |
| R926 | ERDS2TJ683T | RES,C 68K-J-1/4W | |
| R927 | ERDS2TJ561T | RES,C 560-J-1/4W | |
| R928 | ERQ12AJ151P | RES,F 150-J-1/2W | |
| R929 | ERQ14AJ2R2P | RES,F 2.2-J-1/4W | |
| R930 | ERDS2TJ820T | RES,C 82-J-1/4W | |
| R931 | ERQ14AJ2R2P | RES,F 2.2-J-1/4W | |
| R932 | ERQ14AJ3R3P | RES,F 3.3-J-1/4W | |
| R933 | ERQ14AJ3R3P | RES,F 3.3-J-1/4W | |
| R934 | ERQ1CJP331S | RES,F 330-J-1W | |
| R935 | ERG2FJ391H | RES,M 390-J-2W | |
| R937 | ERJ6GEYJ121V | RES,M 120-J-1/10W | |
| R940 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R941 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R942 | ERG2FJ391H | RES,M 390-J-2W | |
| R1051 | ERJ6ENF1002V | RES,M 10K-F-1/10W | |
| R1052 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R1053 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R1054 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W | |
| R1055 | ERJ6GEYJ512V | RES,M 5.1K-J-1/10W | |
| R1056 | ERJ6GEYJ912V | RES,M 9.1K-J-1/10W | |
| R1057 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R1058 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R1059 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R1060 | ERJ6GEYJ470V | RES,M 47-J-1/10W | |
| R1061 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R1062 | ERJ6GEYJ182V | RES,M 1.8K-J-1/10W | |
| R1063 | ERJ6GEYJ133V | RES,M 13K-J-1/10 | |
| R1064 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R1401 | ERJ6ENF3902V | RES,M 39K-F-1/10W | |
| R1402 | ERJ6ENF3012V | RES,M 30.1K-F-1/16W | |
| R1403 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R1404 | ERJ6ENF8201V | RES,M 8.2K-F-1/10W | |
| R1405 | ERJ6ENF9101V | RES,M 9.1K-F-1/10W | |
| R1406 | ERJ6ENF2101V | RES,M 2.1K-F-1/10W | |
| R1407 | ERJ6ENF6800V | RES,M 680-F-1/10W | |

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| R1408 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R1409 | ERDS2TJ473T | RES,C 47K-J-1/4W | |
| R1410 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R1411 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R1507 | ERJ6ENF4701V | RES,M 4.7K-F-1/10W | |
| R1508 | ERJ6ENF1002V | RES,M 10K-F-1/10W | |
| R1512 | ERJ6ENF1002V | RES,M 10K-F-1/10W | |
| R1514 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R1515 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R1518 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R1522 | ERJ6GEYJ330V | RES,M 33-J-1/10W | |
| R1523 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R1526 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R1527 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R1529 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R1530 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R1531 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R1534 | ERJ6ENF2201V | RES,M 2.2K-F-1/10W | |
| R1536 | ERJ6ENF1962V | RES,M 19.6K-F-1/10W | |
| R1537 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R1569 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R1583 | ERJ6ENF5761V | RES,M 5.76K-F-1/10W | |
| R1585 | ERJ6ENF3651V | RES,M 3.65K-F-1/16W | |
| R1587 | ERJ6ENF2202V | RES,M 22K-F-1/10W | |
| R1588 | ERJ6GEYJ152V | RES,M 1.5K-J-1/10W | |
| R1591 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R1592 | ERJ6GEYJ152V | RES,M 1.5K-J-1/10W | |
| R1593 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R1599 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R2203 | ERJ6GEYJ222V | RES,M 2.2K-J-1/10W | |
| R2206 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2207 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2221 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R2301 | ERJ6ENF1100V | RES,M 110-F-1/10W | |
| R2302 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |
| R2302 | ERJ6ENF5232V | RES,M 5.32K-F-1/10W | |
| R2303 | ERJ6ENF1100V | RES,M 110-F-1/10W | |
| R2304 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |
| R2304 | ERJ6ENF4701V | RES,M 4.7K-F-1/10W | |

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| R2307 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |
| R2308 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R2309 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2309 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R2310 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2312 | ERJ6ENF1303V | RES,M 130K-F-1/10W | |
| R2313 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R2314 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |
| R2315 | ERJ6GEYJ683V | RES,M 68K-J-1/10W | |
| R2316 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2317 | ERJ6ENF4701V | RES,M 4.7K-F-1/10W | |
| R2318 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R2319 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |
| R2320 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |
| R2322 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2324 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2325 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2326 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2328 | ERJ6GEYJ223V | RES,M 22K-J-1/10W | |
| R2329 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2331 | ERJ6ENF5232V | RES,M 5.32K-F-1/10W | |
| R2332 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2332 | ERJ6GEYJ392V | RES,M 3.9K-J-1/10W | |
| R2333 | ERJ6GEYJ183V | RES,M 18K-J-1/10W | |
| R2334 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2335 | ERJ6GEYJ271V | RES,M 270-J-1/10W | |
| R2336 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W | |
| R2337 | ERJ6GEYJ271V | RES,M 270-J-1/10W | |
| R2340 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R2342 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R2344 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R2345 | ERJ6GEYJ683V | RES,M 68K-J-1/10W | |
| R2347 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R2351 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2352 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2353 | ERJ6GEYJ183V | RES,M 18K-J-1/10W | |
| R2354 | ERJ6GEYJ432V | RES,M 4.3K-J-1/10W | |
| R2355 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2356 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |

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| R2357 | ERJ6GEYJ332V | RES,M 3.3K-J-1/10W | |
| R2358 | ERJ6GEYJ183V | RES,M 18K-J-1/10W | |
| R2359 | ERJ6GEYJ432V | RES,M 4.3K-J-1/10W | |
| R2360 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2361 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2362 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R2363 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R2365 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2366 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2367 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R2368 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R2372 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2373 | ERJ6GEYJ333V | RES,M 33K-J-1/10W | |
| R2374 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2375 | ERJ6GEYJ682V | RES,M 6.8K-J-1/10W | |
| R2379 | ERJ6GEYJ473V | RES,M 47K-J-1/10W | |
| R2384 | ERJ6GEYJ472V | RES,M 4.7K-J-1/10W | |
| R2385 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2396 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R2404 | ERJ6GEYJ152V | RES,M 1.5K-J-1/10W | |
| R2422 | ERJ6GEYJ683V | RES,M 68K-J-1/10W | |
| R2451 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R2452 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R2453 | ERJ6GEYJ681V | RES,M 680-J-1/10W | |
| R2454 | ERJ6GEYJ471V | RES,M 470-J-1/10W | |
| R2456 | ERJ6GEYJ681V | RES,M 680-J-1/10W | |
| R2457 | ERJ6GEYJ471V | RES,M 470-J-1/10W | |
| R2851 | ERX2SJS1R3H | RES,M 1.3-J-2W | |
| R2852 | ERJ6ENF1202V | RES.M 1.2K-F-1/10W | |
| R2853 | ERJ6ENF1911V | RES,M 1.91K-F-1/10W | |
| R2854 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R2856 | ERJ6ENF1651V | RES,M 1.65K-F-1/10W | |
| R2857 | ERJ6ENF1021V | RES,M 1.02K-F-1/10W | |
| R2858 | ERJ6ENF1541V | RES,M 1.54K-F-1/10W | |
| R2859 | ERJ6ENF1471V | RES,M 1.47K-F-1/10W | |
| R2860 | ERJ6ENF4300V | RES,M 430-F-1/10W | |
| R2861 | ERJ6ENF1001V | RES,M 1K-F-1/10W | |
| R2862 | ERJ6ENF3001V | RES,M 3K-F-1/10W | |
| R2863 | ERJ6ENF1001V | RES,M 1K-F-1/10W | |

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|---|---|---|---|
| R2863 | ERJ6ENF9760V | RES,M 976-F-1/10W | |
| R2883 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R2892 | ERJ6ENF1002V | RES,M 10K-F-1/10W | |
| R3301 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3302 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3303 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3304 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3305 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3306 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3307 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3308 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3309 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3310 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3311 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3312 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3313 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3314 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R3315 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3316 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3317 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3318 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3319 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3320 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R3321 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3322 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3323 | ERJ6ENF75R0V | RES,M 75.0-F-1/10W | |
| R3324 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3326 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3327 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3328 | ERJ6GEYJ184V | RES,M 180K-J-1/10W | |
| R3403 | ERJ6GEYJ224V | RES,M 220K-J-1/10W | |
| R3404 | ERJ6GEYJ224V | RES,M 220K-J-1/10W | |
| R3801 | ERJ6GEYJ560V | RES,M 56-J-1/10W | |
| R3802 | ERJ6GEYJ560V | RES,M 56-J-1/10W | |
| R3803 | ERJ6GEYJ560V | RES,M 56-J-1/10W | |
| R3804 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R3805 | ERDS2TJ471T | RES,C 470-J-1/4W | |
| R3806 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R3807 | EROS2THF3013 | RES,M 301K-F-1/4W | |

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|---|---|---|---|
| R3808 | ERJ6ENF1402V | RES,M 14K-F-1/10W | |
| R3809 | ERJ6GEYJ330V | RES,M 33-J-1/10W | |
| R3810 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R3811 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R3812 | ERJ6GEYJ330V | RES,M 33-J-1/10W | |
| R3813 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R3814 | EROS2THF3013 | RES,M 301K-F-1/4W | |
| R3815 | ERJ6ENF1402V | RES,M 14K-F-1/10W | |
| R3816 | ERJ6GEYJ330V | RES,M 33-J-1/10W | |
| R3817 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R3818 | ERDS2TJ224T | RES,C 220K-J-1/4W | |
| R3819 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R3820 | ERDS2TJ224T | RES,C 220K-J-1/4W | |
| R3821 | ERDS2TJ104T | RES,C 100K-J-1/4W | |
| R3822 | EROS2THF3013 | RES,M 301K-F-1/4W | |
| R3823 | ERDS2TJ224T | RES,C 220K-J-1/4W | |
| R3824 | ERC12GK101V | RES,C 100-K-1/2W | |
| R3825 | ERC12GK101V | RES,C 100-K-1/2W | |
| R3826 | ERC12GK101V | RES,C 100-K-1/2W | |
| R3827 | ERJ6ENF1402V | RES,M 14K-F-1/10W | |
| R3828 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R3829 | ERJ6GEYJ102V | RES,M 1K-J-1/10W | |
| R3830 | ERG1SJ682P | RES,M 6.8K-J-1W | |
| R3831 | ERG2FJ333H | RES,M 33K-J-2W | |
| R3832 | ERDS2TJ151T | RES,C 150-J-1/4W | |
| R3833 | ERDS2TJ151T | RES,C 150-J-1/4W | |
| R3834 | ERDS2TJ151T | RES,C 150-J-1/4W | |
| R3836 | ERG2FJ101H | RES,M 100-J-2W | |
| R3843 | ERDS2TJ224T | RES,C 220K-J-1/4W | |
| R3844 | EROS2THF8871 | RES,M 8.87K-F-1/4W | |
| R3845 | ERJ6ENF33R0V | RES,M 33.OK-F-1/10W | |
| R3846 | ERJ6ENF33R0V | RES,M 33.OK-F-1/10W | |
| R3847 | ERJ6ENF33R0V | RES,M 33.OK-F-1/10W | |
| R3848 | ERJ6ENF2200V | RES,M 220-F-1/10W | |
| R3849 | ERJ6ENF2200V | RES,M 220-F-1/10W | |
| R3850 | ERJ6ENF2200V | RES,M 220-F-1/10W | |
| R3851 | ERJ6GEYJ391V | RES,M 390-J-1/10W | |
| R3852 | ERJ6GEYJ391V | RES,M 390-J-1/10W | |
| R3853 | ERJ6GEYJ391V | RES,M 390-J-1/10W | |

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|---|---|---|---|
| R3857 | ERG2FJ393H | RES,M 39K-J-2W | |
| R5501 | ERJ6GEYJ153V | RES,M 15K-J-1/10W | |
| R5502 | ERJ6GEYJ153V | RES,M 15K-J-1/10W | |
| R5504 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R5505 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R5507 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R5508 | ERJ6GEYJ101V | RES,M 100-J-1/10W | |
| R5511 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| R5801 | ERJ6GEYJ153V | RES,M 15K-J-1/10W | |
| R5802 | ERJ6GEYJ104V | RES,M 100K-J-1/10W | |
| R5804 | ERG1SJ470P | RES,M 47-J-1W | |
| R5805 | ERDS1FJ1R0T | RES,C 1.0-J-1/2W | |
| R5806 | ERJ6ENF5602V | RES,M 56K-F-1/10W | |
| R5807 | ERJ6ENF2001V | RES,M 2K-F-1/10W | |
| R5808 | ERDS1FJ391T | RES,C 390-J-1/2W | |
| R5809 | ERX12SJR68P | RES,M .68-J-1/2W | |
| R5810 | ERX12SJR47P | RES,M .47-J-1/2W | |
| R5811 | ERDS2TJ102T | RES,C 1K-J-1/4W | |
| R5812 | ERDS2TJ822T | RES,C 8.2K-J-1/4W | |
| R5813 | ERDS1FJ391T | RES,C 390-J-1/2W | |
| R5815 | ERJ6GEYJ103V | RES,M 10K-J-1/10W | |
| SWITCHES | | | |
| SW001 | EVQPBD05R | SWITCH | |
| SW002 | EVQPBD05R | SWITCH | |
| SW003 | EVQPBD05R | SWITCH | |
| SW004 | EVQPBD05R | SWITCH | |
| SW005 | EVQPBD05R | SWITCH | |
| SW006 | EVQPBD05R | SWITCH | |
| SW007 | EVQPBD05R | SWITCH | |
| SW008 | EVQPBD05R | SWITCH | |
| TRANSFORMERS | | | |
| T501 | ETH19K207AZ | TRANSFORMER | |
| T550 | G4E1A0000011 | TRANSFORMER | |
| T551 | ZTFN95006A | TRANSFORMER,FLYBACK | ⚠ |
| T553 | ETS28AU2K9AD | TRANSFORMER | |
| T561 | ETF18L101A | TRANSFORMER | |
| T801 | ETS42AU185AD | TRANSFORMER | ⚠ |
| T802 | ETP28KBZA1ZG | TRANSFORMER | ⚠ |

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|---|---|---|---|
| T3023 | G0BYYYY00016 | TRANSFORMER | |
| OTHERS | | | |
| TNR001 | ENGF6302GF | TUNER | ⚠ |
| TNR002 | ENG36A08GF | TUNER | ⚠ |
| 1 | M80LSW095X | CRT | ⚠ |
| M001 | K3B10CA00041 | CRT SOCKET | |
| 2 | TLY2AA039 | YOKE DEFLECTION | ⚠ |
| M002 | TXFYA010EEW | DAG GROUND | |
| 3 | TSP2AA034 | DEGAUSSING COIL | ⚠ |
| 4 | TSP2AF007 | ROTATION COIL | |
| 5 | TSP2AF009 | GEOMAGNETIC COIL | |
| 6 | EASG12S503A2 | WOOFER SPEAKER | |
| 7 | EASG7DH08E2 | TWEETER | |
| M003 | TKP2AA1311S | SPEAKER BOX BASE | |
| M004 | TXFKP10JSER | SPEAKER BOX COVER | |
| 8 | TBX2AA0241 | DISC BUTTON | |
| 9 | TBX2AA0251 | FUNCTION KEY BUTTONS | |
| 10 | TKX2AA0201 | LED GUIDE | |
| 11 | TKX2AA0211 | IR GUIDE | |
| 12 | TEK6935 | DOOR CATCH | |
| 13 | TKP2AA1122S | DOOR PANEL | |
| M005 | TMW2A97121 | BRKT A/C CORD | |
| M006 | TMZ2AC50011 | BRACKET SUPPORT CRT | |
| M007 | TSM2AA001 | MAGNET, PERMALLOY | |
| M008 | TSN63115-4 | MAGNET, PURITY | |
| M009 | TSX2AA0411 | LINE CORD | ⚠ |
| M010 | TXFKP11JSER | A/V BRACKET | |
| 14 | TXFKU01HG4S | CABINET BACK | |
| 15 | TXFKY01HG4S | CABINET FRONT | |
| JK3301 | TJB2AA0521 | CONNECTOR | |
| JK3401 | TJB2AA0511 | CONNECTOR | |
| JK3302A | TJB2AA0532 | CONNECTOR | |
| JK3804A | K3B10CA00041 | CONNECTOR | |
| ACCESORIES | | | |
| M011 | TQB2AA0500 | OWNERS MANUAL | |
| M012 | EUR7603ZF0 | REMOTE CONTROL | |

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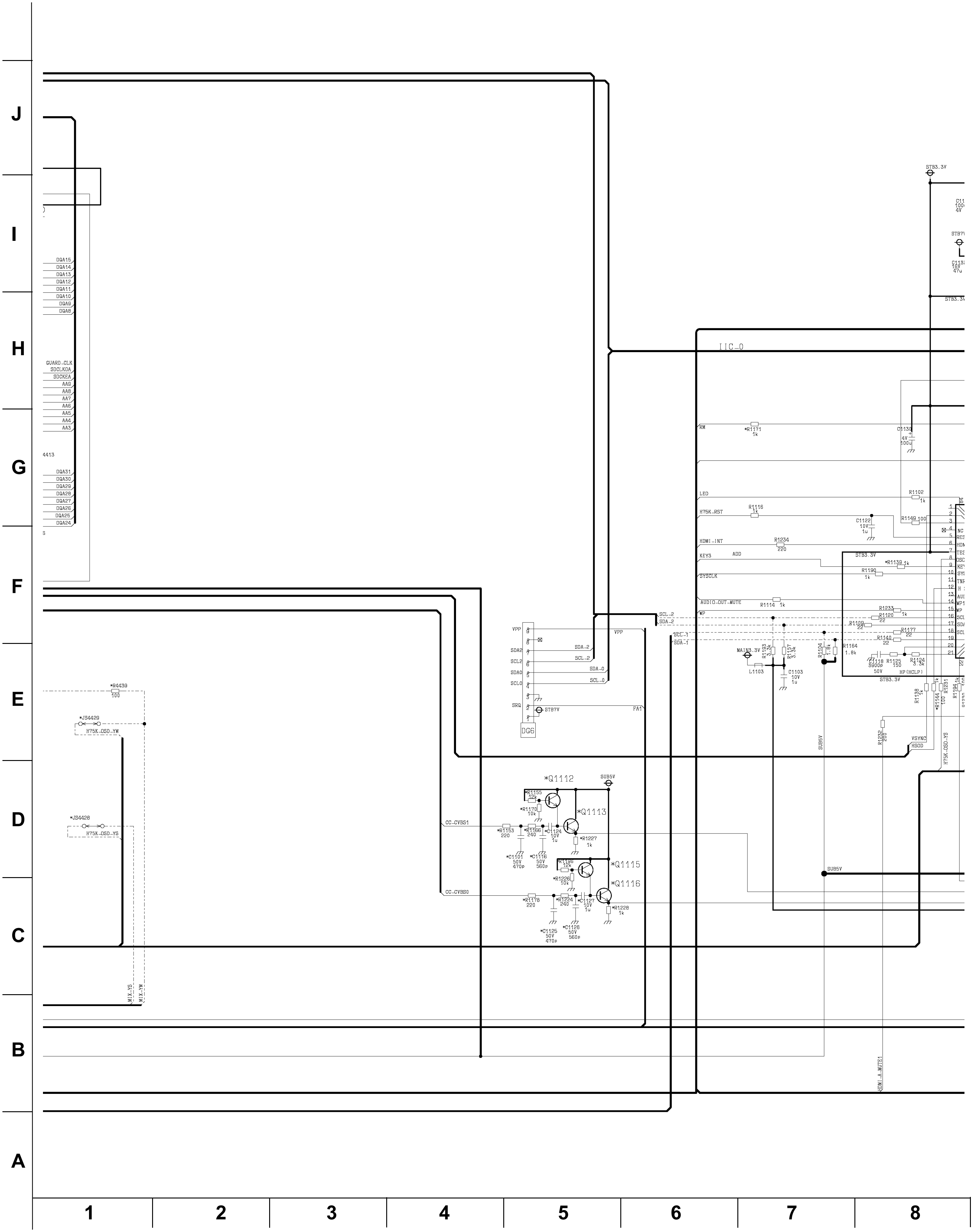
|---|---|---|---|
| M013 | EUR7603ZFA | REMOTE CONTROL | |
| M014 | UR76EC0303E | BATTERY COVER REMOTE CONTROLS | |

TOP PREVIOUS



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SDCKEA
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MIX-YM
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STB7V
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C1130
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100u
LED
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H75K-RST
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C1122
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HDMI-INT
R1234
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KEY3
ADD
SYSCLK
*R1139
1k
R1190
1k
AUDIO-OUT-MUTE
R1114
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R1233
1k
R1120
22
R1109
22
R1177
22
R1140
22
SCL-2
SDA-2
SCL-1
SDA-1
WP
VPP
SDA2
SCL2
SDA0
SCL0
SRQ
SDA-2
SCL-2
SDA-0
SCL-0
FA1
DG6
MAIN3.3V
L1103
R1193
3.3k
R1157
3.3k
C1103
10V
1u
R1104
1.8k
R1164
1.8k
C1118
3900p
50V
R1125
150
R1124
3.3k
HP(HCLP)
STB3.3V
R1138
1k
*R1144
100
R1231
1k
R1194
1k
R1232
200
VSYNC
HSOD
H75K-OSD-YS
SUB5V
SUB5V
*Q1112
*Q1113
*Q1115
*Q1116
*R1155
12k
*R1170
10k
*R1166
240
*C1124
10V
1u
*R1227
1k
CC-CVBS1
*R1153
220
*C1101
50V
470p
*C1116
50V
560p
*R1196
12k
*R1226
10k
CC-CVBS0
*R1178
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*R1224
240
*C1127
10V
1u
*R1228
1k
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470p
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560p
HDMI-A-MUTE1

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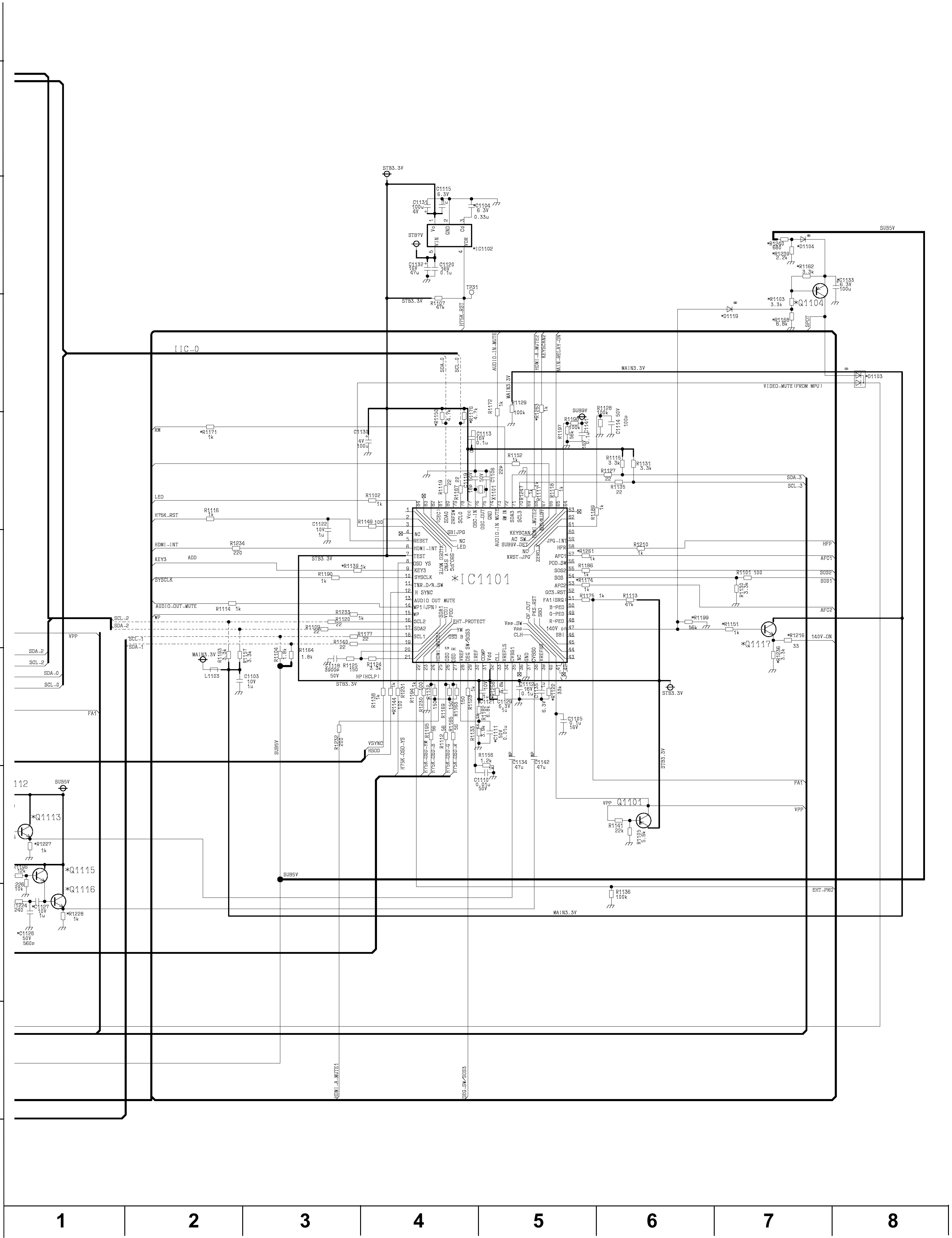
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STB3.3V
STB7V
*IC1102
C1115 6.3V 1u
C1131 100u 4V
*C1104 6.3V 0.33u
C1132 16V 47u
C1120 16V 0.1u
TP31
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*R1162 3.3k
*C1133 6.3V 100u
*R1103 3.3k
*Q1104
*R1166 6.8k
*D1119
SPOT
MAIN3.3V
*D1103
VIDEO-MUTE(FROM MPU)
AUDIO-IN-MUTE
HDMI-A-MUTE2
KEYSCAN2
MAIN-RELAY-ON
SDA-0
SCL-0
*R1150 4.7k
*R1176 4.7k
R1172 1k
R1129 100k
*R1263 1k
SUB9V
R1128 100k
C1114 50V 100p
C1130 4V 100u
C1113 16V 0.1u
RM
*R1171 1k
R1152 1k
R1115 3.3k
R1131 3.3k
R1127 22
R1135 22
SDA-3
SCL-3
LED
R1102 1k
H75K-RST
R1116 1k
R1149 100
C1122 10V 1u
HDMI-INT
R1234 220
KEY3
ADD
SYSCLK
AUDIO-OUT-MUTE
R1114 1k
*IC1101
*R1139 1k
R1190 1k
R1233 1k
R1120 22
R1109 22
R1177 22
R1140 22
R1164 1.8k
R1104 1.8k
C1118 3900P 50V
R1125 150
R1124 3.3k
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R1186 1k
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SOS1
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R1175 1k
R1113 47k
AFC2
*R1199 56k
R1151 1k
*Q1117
*R1216 33
140V-ON
*R1236 3.3k
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H75K-OSD-YS
R1232 200
C1105 0.1u 16V
C1134 47u
C1142 47u
R1156 1.2k
C1110 0.01u 50V
C1111 50V 0.01u
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R1105 5.6k
FA1
VPP
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*R1227 1k
*Q1115
*Q1116
*R1228 1k
*C1126 50V 560p
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R1136 100k
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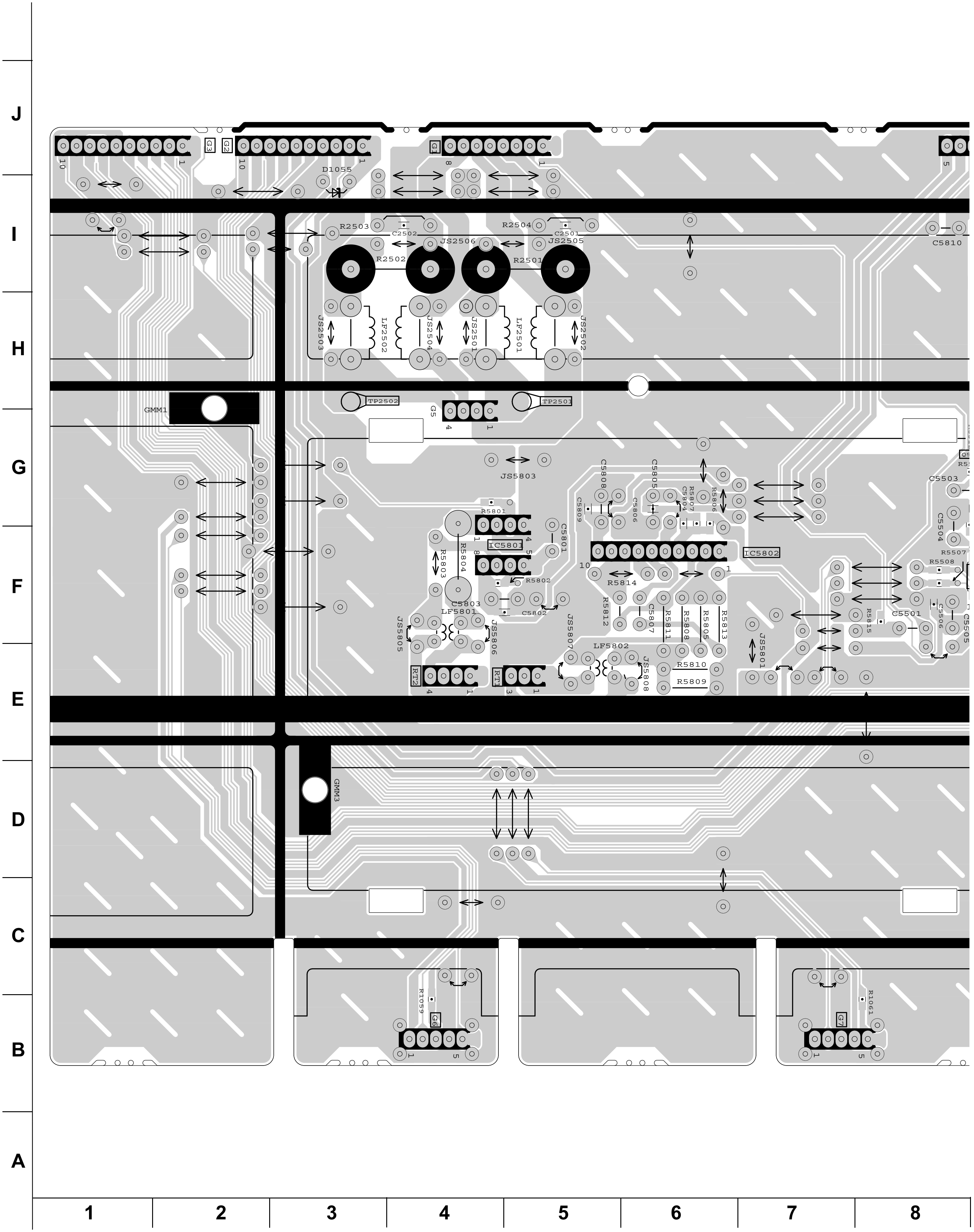
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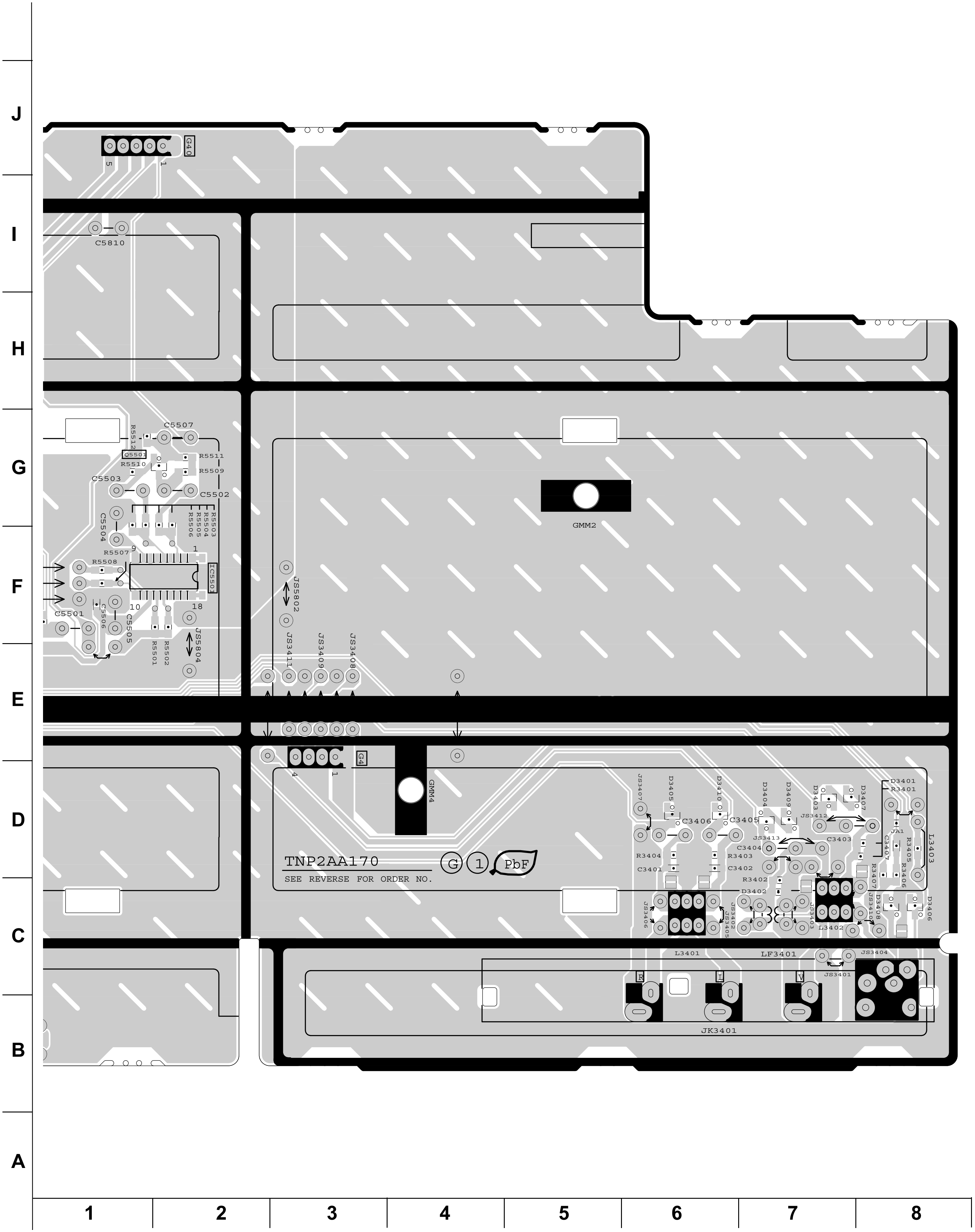
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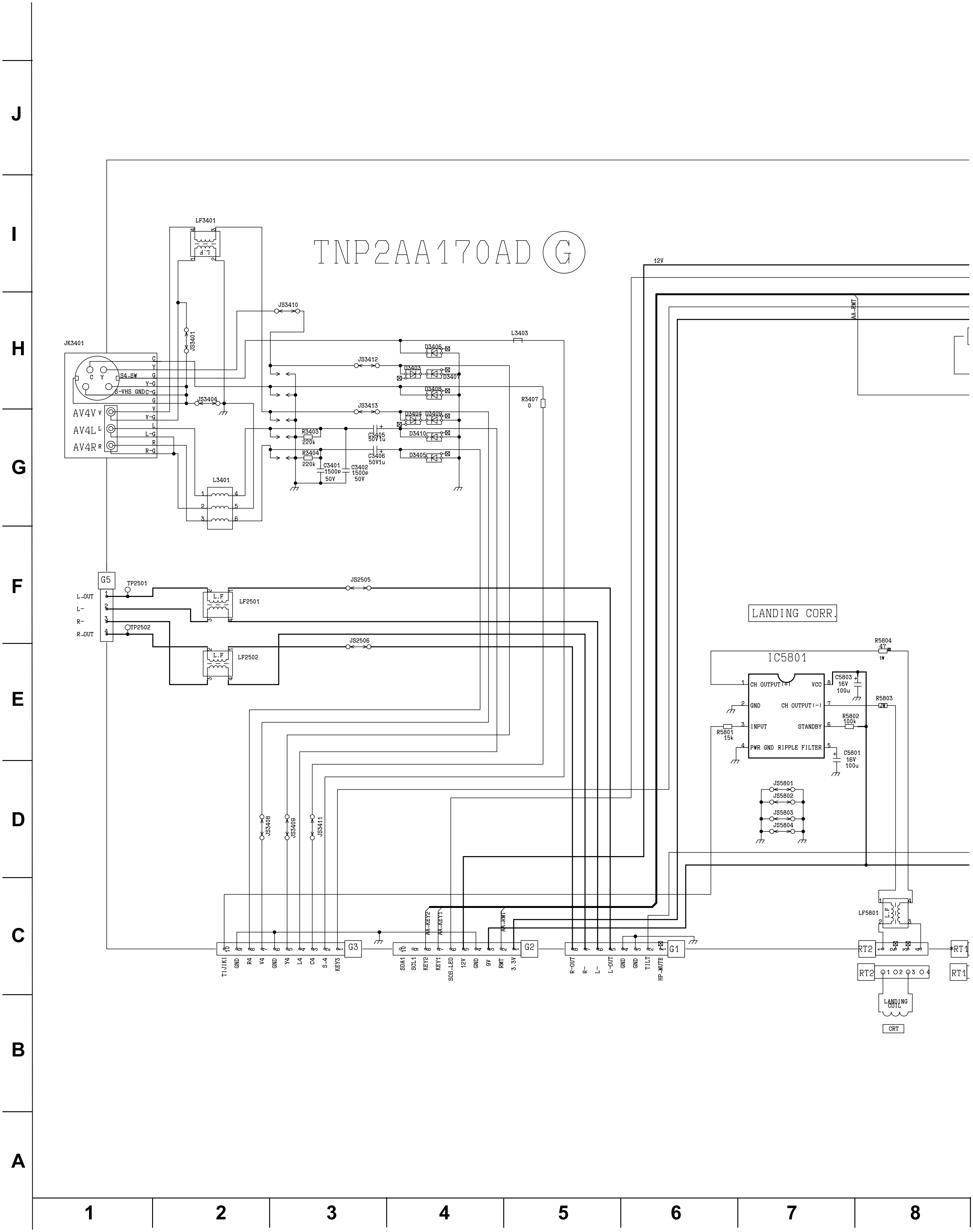
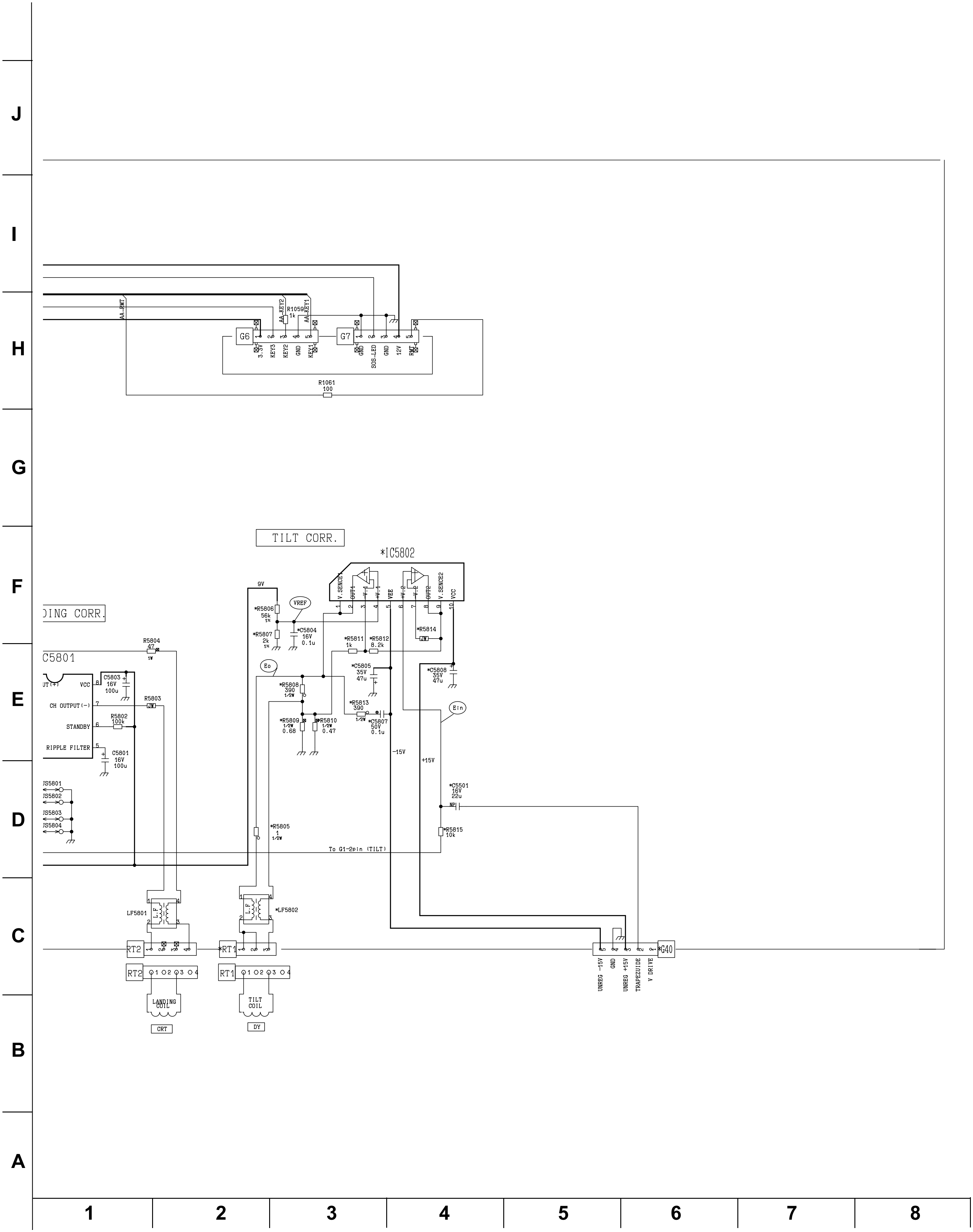
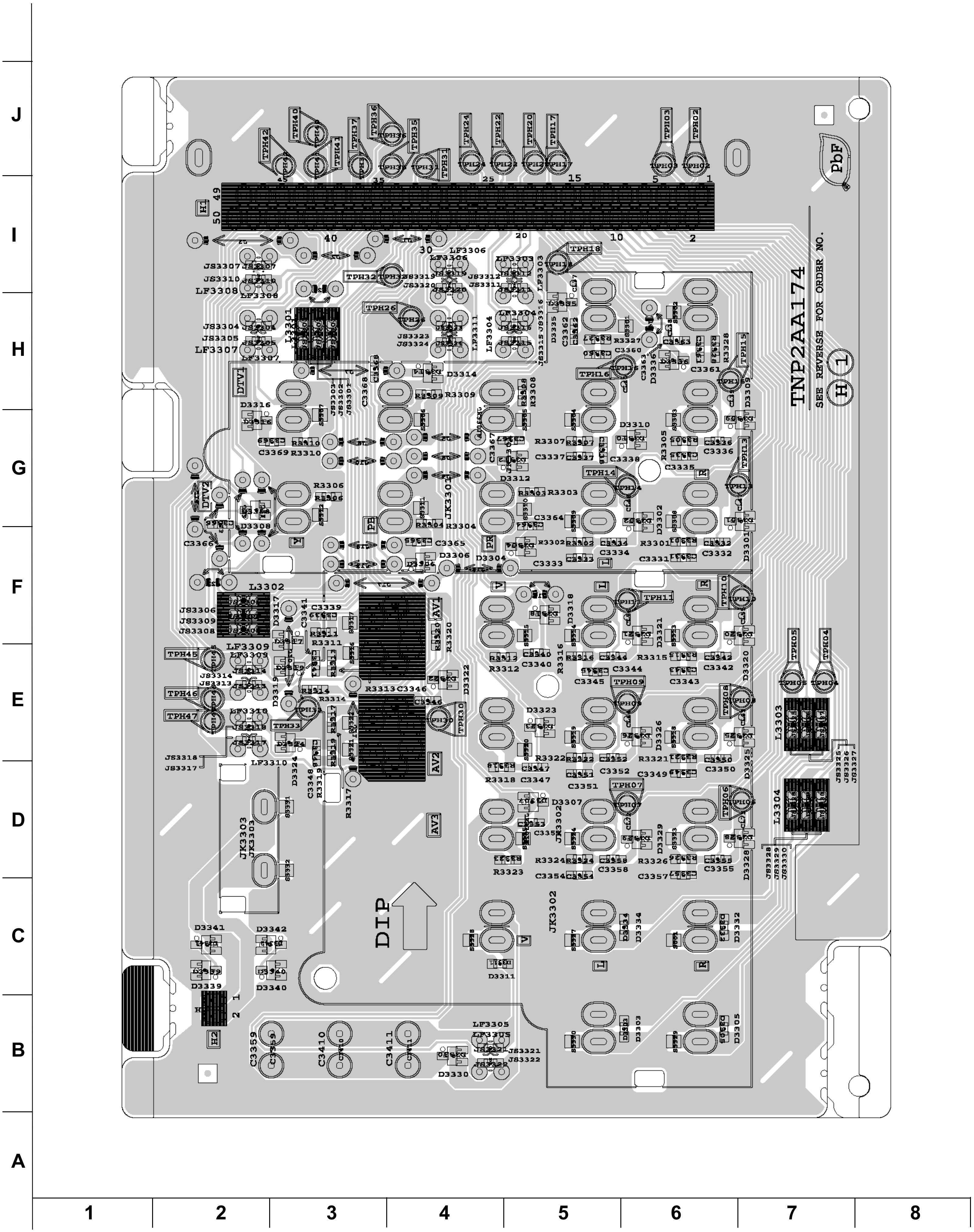
C5504
R5506
R5505
R5504
R5503
9
1
R5507
R5508
IC5501
10
18
C5501
C5506
C5505
R5501
R5502
JS5802
JS5804
JS3411
JS3409
JS3408
GMM2
G4
4
1
GMM4
TNP2AA170
SEE REVERSE FOR ORDER NO.
G
1
PbF
JS3407
D3405
D3410
D3404
D3409
D3403
D3407
D3401
R3401
JS3412
C3406
C3405
C3404
JS3413
C3403
JA1
C3407
R3405
L3403
R3404
R3403
C3401
C3402
R3402
R3407
R3406
D3402
JS3406
JS3402
JS3405
JS3403
D3408
JS3410
D3406
L3402
L3401
LF3401
JS3404
JS3401
R
L
V
JK3401



TNP2AA170AD G
JK3401
AV4V
AV4L
AV4R
S4-SW
S-VHS GND
LF3401
L3401
JS3401
JS3404
JS3410
JS3412
JS3413
D3403
D3404
D3405
D3406
D3407
D3408
D3409
D3410
R3403 220k
R3404 220k
C3401 1500p 50V
C3402 1500p 50V
C3405 50V1u
C3406 50V1u
L3403
R3407 0
12V
AA-RMT
G5
L-OUT
L-
R-
R-OUT
TP2501
TP2502
LF2501
LF2502
JS2505
JS2506
JS3408
JS3409
JS3411
G3
TIJIKI
GND
R4
V4
Y4
L4
C4
S-4
KEY3
G2
SDA1
SCL1
KEY2
KEY1
SOS-LED
9V
RMT
3.3V
AA-KEY2
AA-KEY1
G1
R-OUT
TILT
HP-MUTE
LANDING CORR.
IC5801
CH OUTPUT(+)
CH OUTPUT(−)
VCC
INPUT
STANDBY
PWR GND
RIPPLE FILTER
R5801 15k
R5802 100k
R5803
R5804 47 1W
C5801 16V 100u
C5803 16V 100u
JS5801
JS5802
JS5803
JS5804
LF5801
RT1
RT2
LANDING COIL
CRT
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
AA-RMT
AA-KEY2
R1059
1k
AA-KEY1
G6
3.3V
KEY3
KEY2
GND
KEY1
G7
GND
SOS-LED
GND
12V
RMT
R1061
100
TILT CORR.
*IC5802
V.SENCE1
OUT1
V-1
+V-1
VEE
+V-2
V-2
OUT2
V.SENCE2
VCC
9V
VREF
*R5806
56k
1%
*R5807
2k
1%
*C5804
16V
0.1u
*R5811
1k
*R5812
8.2k
*R5814
*C5805
35V
47u
*C5808
35V
47u
Eo
*R5808
390
1/2W
*R5813
390
1/2W
*C5807
50V
0.1u
*R5809
1/2W
0.68
*R5810
1/2W
0.47
Ein
-15V
+15V
*C5501
16V
22u
NP
*R5815
10k
*R5805
1
1/2W
To G1-2pin (TILT)
DING CORR.
IC5801
R5804
47
1W
UT(+)
VCC
C5803
16V
100u
R5803
CH OUTPUT(-)
R5802
100k
STANDBY
RIPPLE FILTER
C5801
16V
100u
JS5801
JS5802
JS5803
JS5804
LF5801
L.F
*LF5802
RT2
*RT1
RT1
LANDING COIL
CRT
TILT COIL
DY
*G40
UNREG -15V
GND
UNREG +15V
TRAPEZUIDE
V DRIVE


J
I
H
G
F
E
D
C
B
A
1
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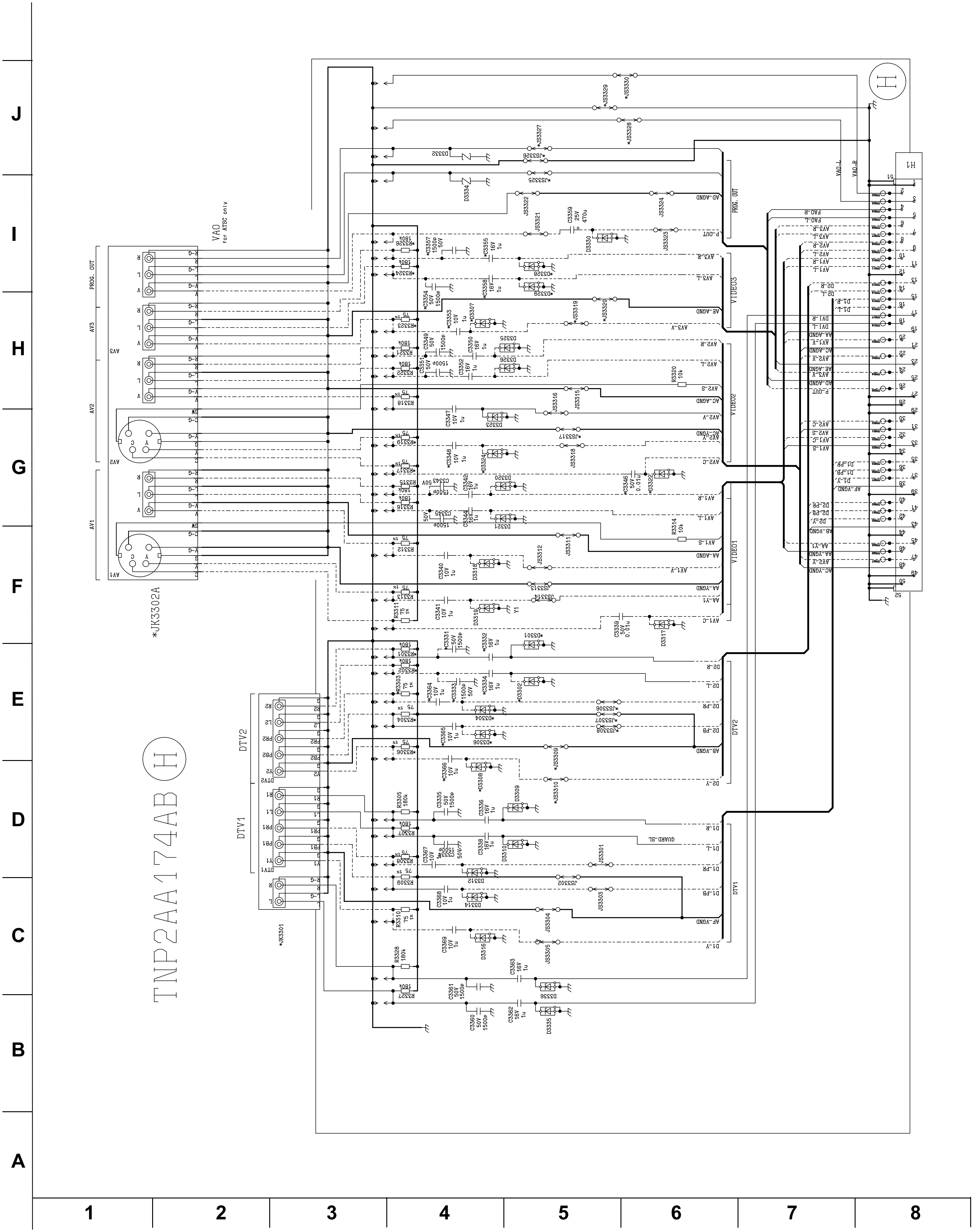
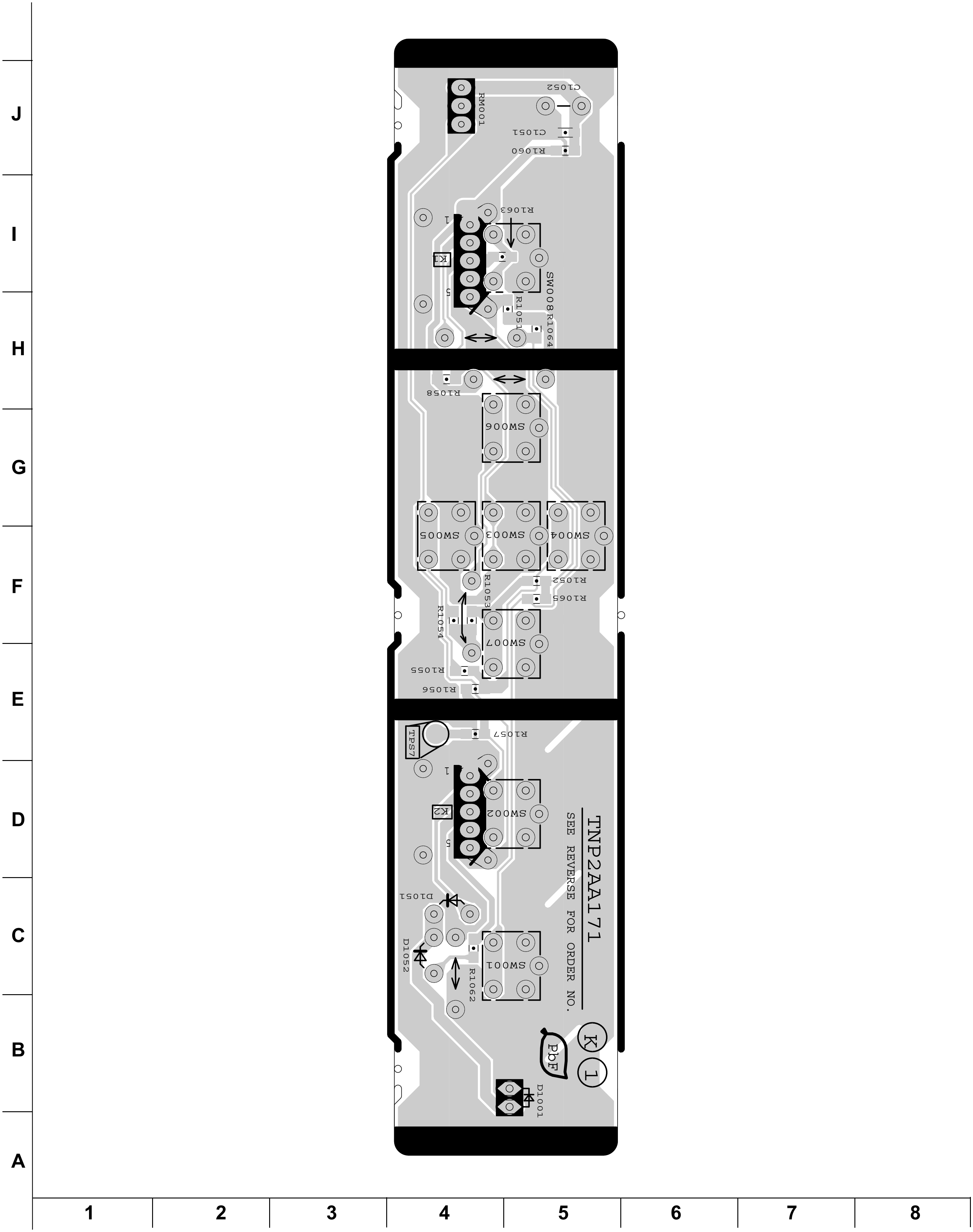
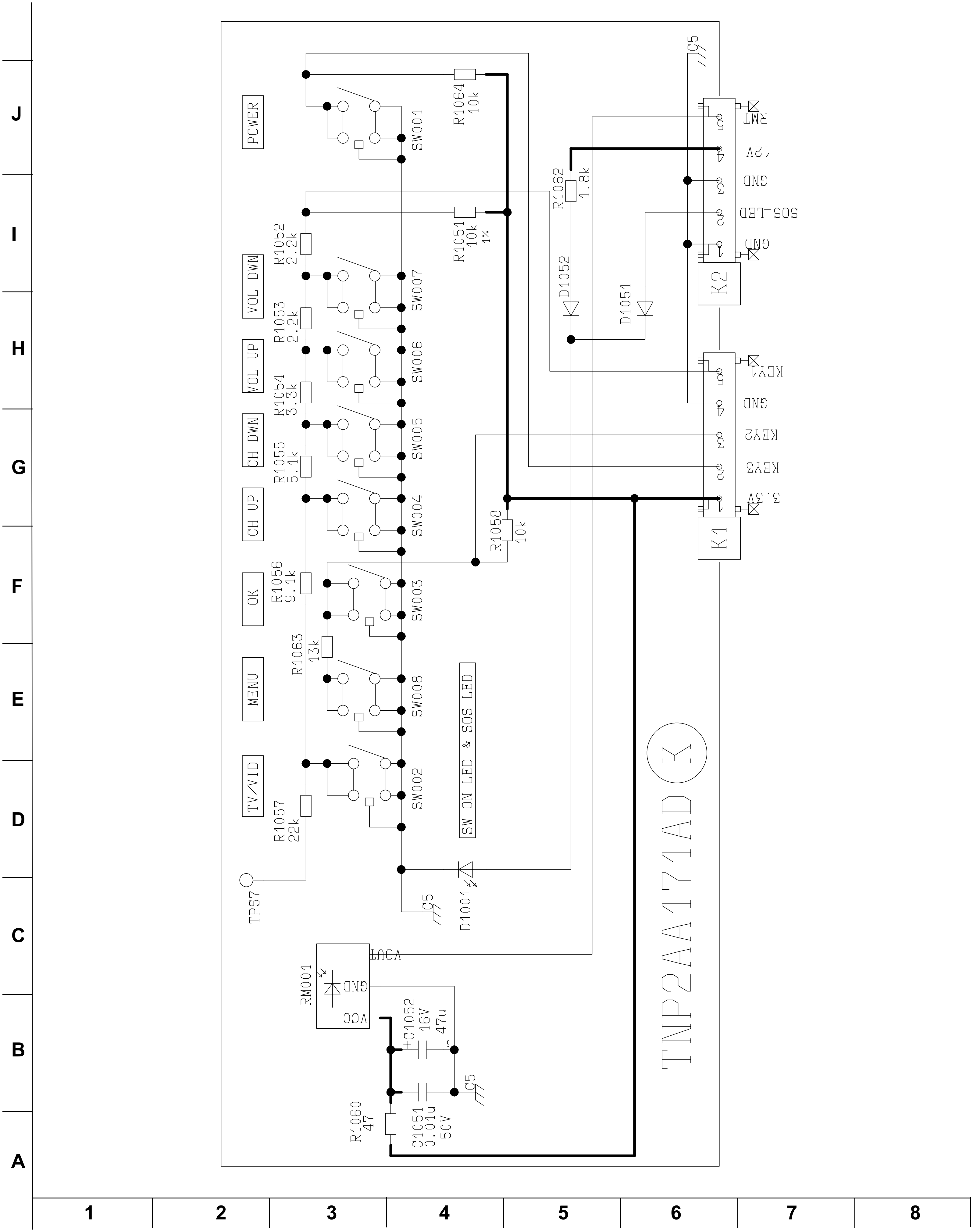
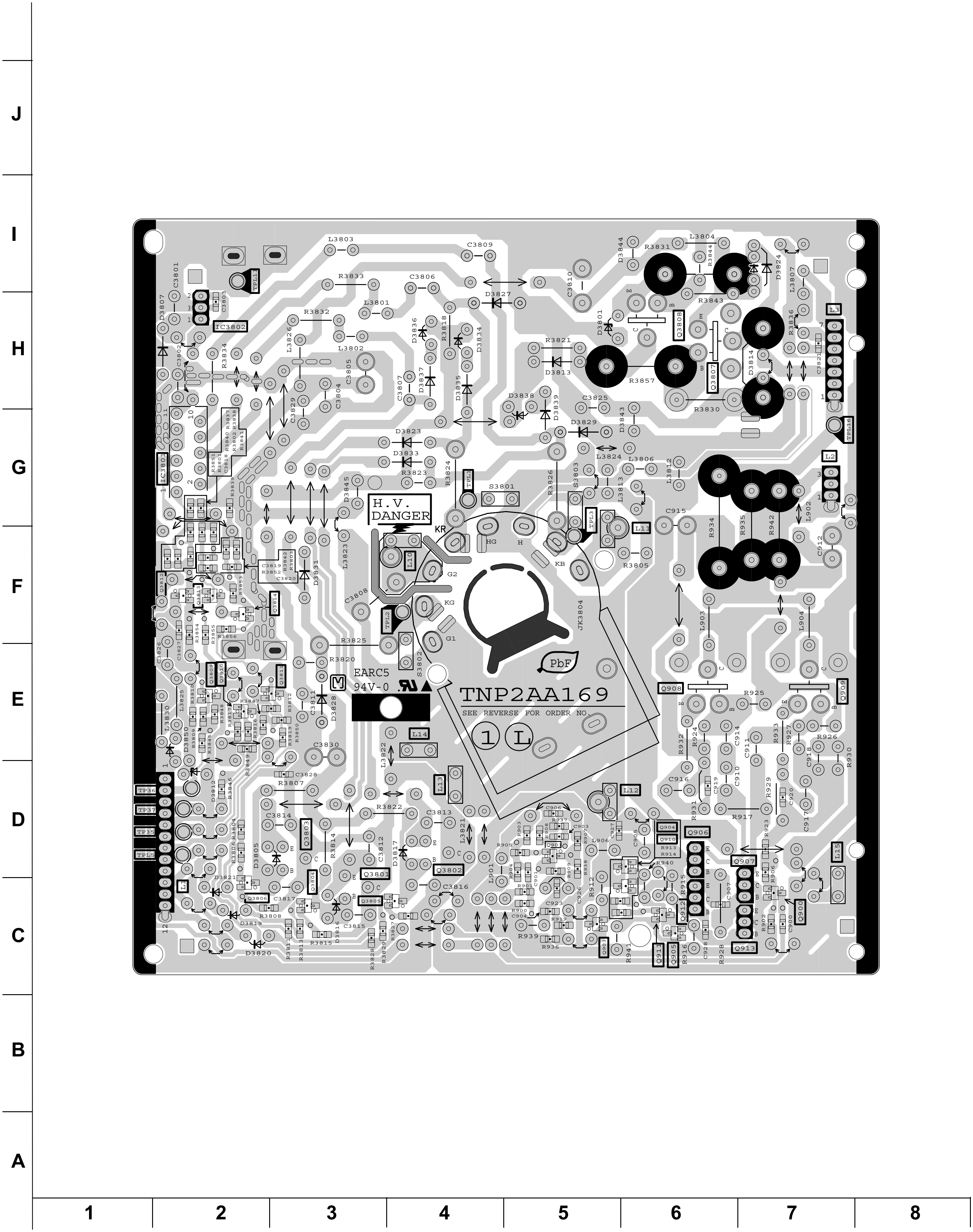
3
4
5
6
7
8
TNP2AA174
SEE REVERSE FOR ORDER NO.
H1
PbF
TPH42
TPH40
TPH41
TPH37
TPH36
TPH35
TPH31
TPH24
TPH22
TPH20
TPH17
TPH03
TPH02
45
35
25
15
5
1
49
50
40
30
20
10
2
TPH18
TPH32
TPH26
TPH16
TPH15
TPH14
TPH13
TPH11
TPH10
TPH09
TPH08
TPH07
TPH06
TPH05
TPH04
TPH45
TPH46
TPH47
TPH33
TPH30
LF3306
LF3303
LF3308
LF3307
LF3304
LF3309
LF3310
LF3305
L3301
L3302
L3303
L3304
JS3307
JS3310
JS3304
JS3305
JS3306
JS3309
JS3308
JS3314
JS3313
JS3318
JS3317
JS3319
JS3320
JS3312
JS3311
JS3323
JS3324
JS3315
JS3316
JS3301
JS3302
JS3303
JS3321
JS3322
JS3325
JS3326
JS3327
JS3328
JS3329
JS3330
DTV1
DTV2
Y
PB
PR
AV1
AV2
AV3
JK3301
JK3302
JK3303
D3301
D3302
D3303
D3304
D3305
D3306
D3307
D3308
D3309
D3310
D3311
D3312
D3314
D3316
D3317
D3318
D3319
D3320
D3321
D3322
D3323
D3324
D3325
D3326
D3328
D3329
D3330
D3332
D3334
D3335
D3336
D3339
D3340
D3341
D3342
R3301
R3302
R3303
R3304
R3305
R3306
R3307
R3308
R3309
R3310
R3311
R3312
R3313
R3314
R3315
R3316
R3317
R3318
R3319
R3320
R3321
R3322
R3323
R3324
R3326
R3327
R3328
C3331
C3332
C3333
C3334
C3335
C3336
C3337
C3338
C3339
C3340
C3341
C3342
C3343
C3344
C3345
C3346
C3347
C3348
C3349
C3350
C3351
C3352
C3353
C3354
C3355
C3357
C3358
C3359
C3360
C3361
C3362
C3363
C3364
C3365
C3366
C3367
C3368
C3369
C3410
C3411
V
L
R
DIP
H2

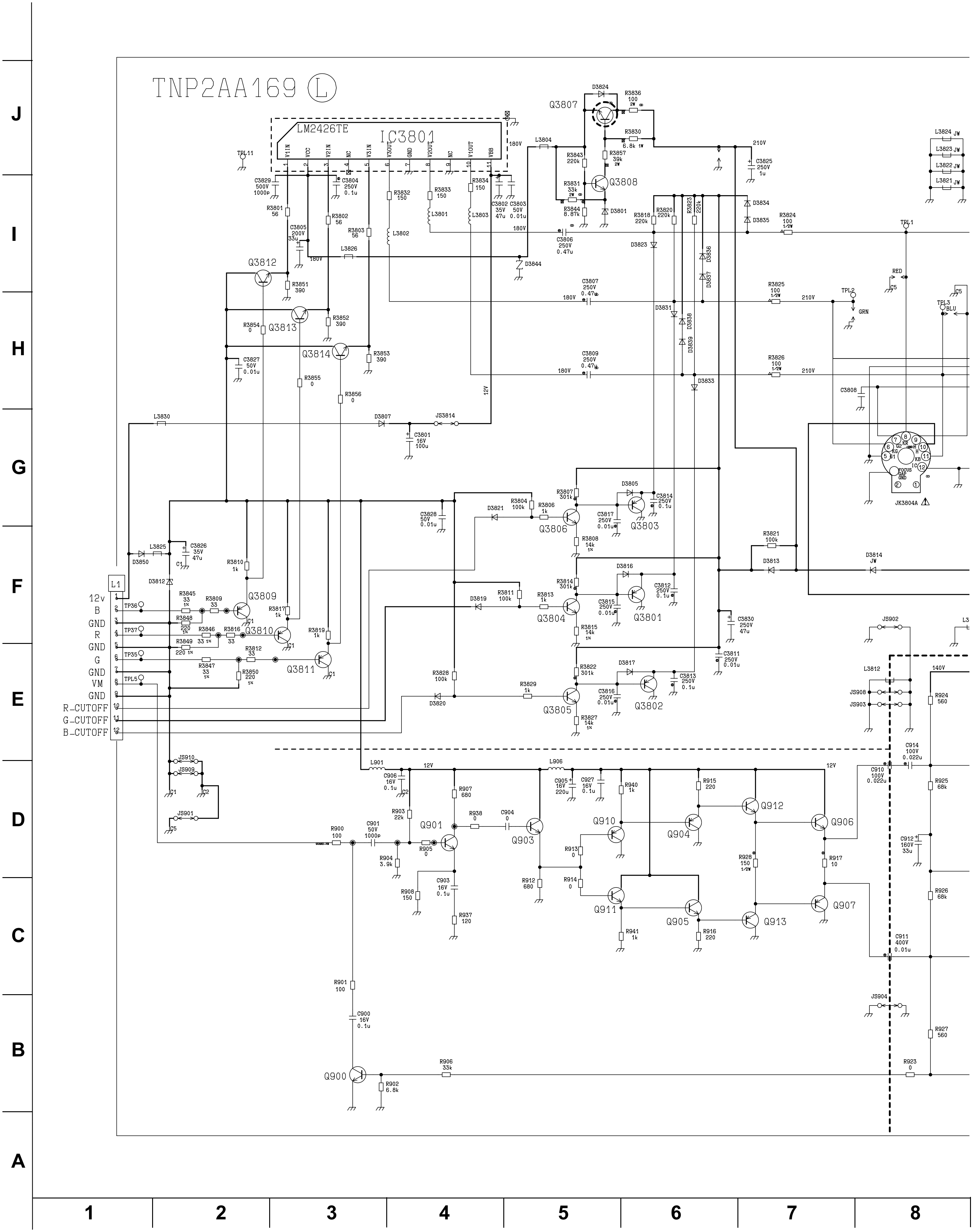

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
TNP2AA174AB
H
*JK3302A
*JK3301
VAO for ATSC only
PROG. OUT
AV3
AV2
AV1
DTV2
DTV1
VIDEO3
VIDEO2
VIDEO1
DTV2
DTV1
PROG. OUT
H1


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
RM001
C1052
C1051
R1060
R1063
1
K1
5
SW008
R1051
R1064
R1058
SW006
SW005
SW003
SW004
R1053
R1052
R1065
R1054
SW007
R1055
R1056
R1057
TPS7
1
K2
5
SW002
TNP2AA171
SEE REVERSE FOR ORDER NO.
D1051
D1052
SW001
R1062
K
1
PbF
D1001

K-BOARD TNP2AA171 CT-32HL44J/UJ


POWER
VOL DWN
VOL UP
CH DWN
CH UP
OK
MENU
TV/VID
SW001
SW007
SW006
SW005
SW004
SW003
SW008
SW002
R1064 10k
R1051 10k 1%
R1052 2.2k
R1053 2.2k
R1054 3.3k
R1055 5.1k
R1056 9.1k
R1063 13k
R1057 22k
R1058 10k
R1062 1.8k
D1052
D1051
D1001
TP57
C5
SW ON LED & SOS LED
RM001
VOUT
GND
VCC
C1052 16V 47u
C1051 0.01u 50V
R1060 47
K1
K2
RMT
12V
GND
SOS-LED
GND
KEY1
GND
KEY2
KEY3
3.3V
5
4
3
2
1
TNP2AA171AD
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
H.V.
DANGER
KR
HG
H
KB
G2
KG
G1
JK3804
EARC5
94V-0
TNP2AA169
SEE REVERSE FOR ORDER NO.
1
L
PbF
IC3801
IC3802
TPL1
TPL2
TPL3
TPL5
TPL11
TPL16
TP35
TP36
TP37
S3801
S3802
S3803
L2
L3
L10
L11
L12
L13
L14
L15
L3801
L3802
L3803
L3804
L3806
L3807
L3812
L3813
L3821
L3822
L3823
L3824
L3825
L3826
L3830
L901
L902
L903
L904
L906
Q3801
Q3802
Q3803
Q3804
Q3805
Q3806
Q3807
Q3808
Q3809
Q3810
Q3811
Q3812
Q3813
Q3814
Q900
Q901
Q903
Q904
Q905
Q906
Q907
Q908
Q909
Q910
Q911
Q912
Q913
R3805
R3807
R3814
R3818
R3820
R3821
R3822
R3823
R3824
R3825
R3826
R3830
R3831
R3832
R3833
R3834
R3836
R3843
R3844
R3857
R912
R915
R916
R917
R924
R925
R926
R927
R928
R929
R930
R931
R932
R933
R934
R935
R939
R941
R942
C3801
C3802
C3803
C3804
C3805
C3806
C3807
C3808
C3809
C3810
C3811
C3812
C3813
C3814
C3815
C3816
C3817
C3825
C3826
C3828
C3829
C3830
C905
C907
C909
C910
C911
C912
C914
C915
C916
C917
C918
C919
C920
C923
C926
C927
C928
D3801
D3805
D3807
D3812
D3813
D3814
D3816
D3817
D3819
D3820
D3821
D3823
D3824
D3827
D3828
D3829
D3831
D3833
D3834
D3835
D3836
D3837
D3838
D3839
D3843
D3844
D3845
D3850
E
C
B


TNP2AA169 (L)
LM2426TE
IC3801
V1IN
VCC
V2IN
NC
V3IN
V3OUT
GND
V2OUT
NC
V1OUT
VBB
Q3807
Q3808
Q3812
Q3813
Q3814
Q3806
Q3803
Q3804
Q3801
Q3805
Q3802
Q3809
Q3810
Q3811
Q900
Q901
Q903
Q904
Q905
Q906
Q907
Q910
Q911
Q912
Q913
L1
12v
B
GND
R
GND
G
GND
VM
GND
R-CUTOFF
G-CUTOFF
B-CUTOFF
TPL11
TPL1
TPL2
TPL3
TPL5
TP36
TP37
TP35
RED
GRN
BLU
JK3804A
FOCUS
GND
180V
210V
140V
12V
12V
JS3814
JS910
JS909
JS901
JS902
JS908
JS903
JS904
L3830
L3825
L3804
L3826
L3801
L3802
L3803
L3812
L3821
L3822
L3823
L3824
L901
L906
C3829 500V 1000p
C3804 250V 0.1u
C3805 200V 33u
C3802 35V 47u
C3803 50V 0.01u
C3806 250V 0.47u
C3807 250V 0.47u
C3809 250V 0.47u
C3825 250V 1u
C3827 50V 0.01u
C3801 16V 100u
C3826 35V 47u
C3828 50V 0.01u
C3814 250V 0.1u
C3817 250V 0.01u
C3812 250V 0.1u
C3815 250V 0.01u
C3830 250V 47u
C3811 250V 0.01u
C3813 250V 0.1u
C3816 250V 0.01u
C3808
C906 16V 0.1u
C901 50V 1000p
C903 16V 0.1u
C904 0
C905 16V 220u
C927 16V 0.1u
C910 100V 0.022u
C914 100V 0.022u
C912 160V 33u
C911 400V 0.01u
C900 16V 0.1u
R3801 56
R3802 56
R3803 56
R3832 150
R3833 150
R3834 150
R3851 390
R3852 390
R3853 390
R3854 0
R3855 0
R3856 0
R3836 100 2W
R3830 6.8k 1W
R3843 220k
R3857 39k 2W
R3831 33k 2W
R3844 8.87k
R3818 220k
R3820 220k
R3823 220k
R3824 100
R3825 100 1/2W
R3826 100 1/2W
R3804 100k
R3806 1k
R3807 301k
R3808 14k 1%
R3810 1k
R3811 100k
R3813 1k
R3814 301k
R3815 14k 1%
R3817 1k
R3819 1k
R3821 100k
R3822 301k
R3827 14k 1%
R3828 100k
R3829 1k
R3845 33 1%
R3809 33
R3848 220 1%
R3846 33 1%
R3816 33
R3849 220 1%
R3812 33
R3847 33 1%
R3850 220 1%
R900 100
R901 100
R902 6.8k
R903 22k
R904 3.9k
R905 0
R906 33k
R907 680
R908 150
R912 680
R913 0
R914 0
R915 220
R916 220
R917 10
R923 0
R924 560
R925 68k
R926 68k
R927 560
R928 150 1/2W
R937 120
R938 0
R940 1k
R941 1k
D3824
D3801
D3844
D3834
D3835
D3823
D3836
D3837
D3831
D3838
D3839
D3833
D3807
D3850
D3812
D3821
D3819
D3820
D3805
D3816
D3817
D3813
D3814 JW
C1
C2
C5

J
I
H
G
F
E
D
C
B
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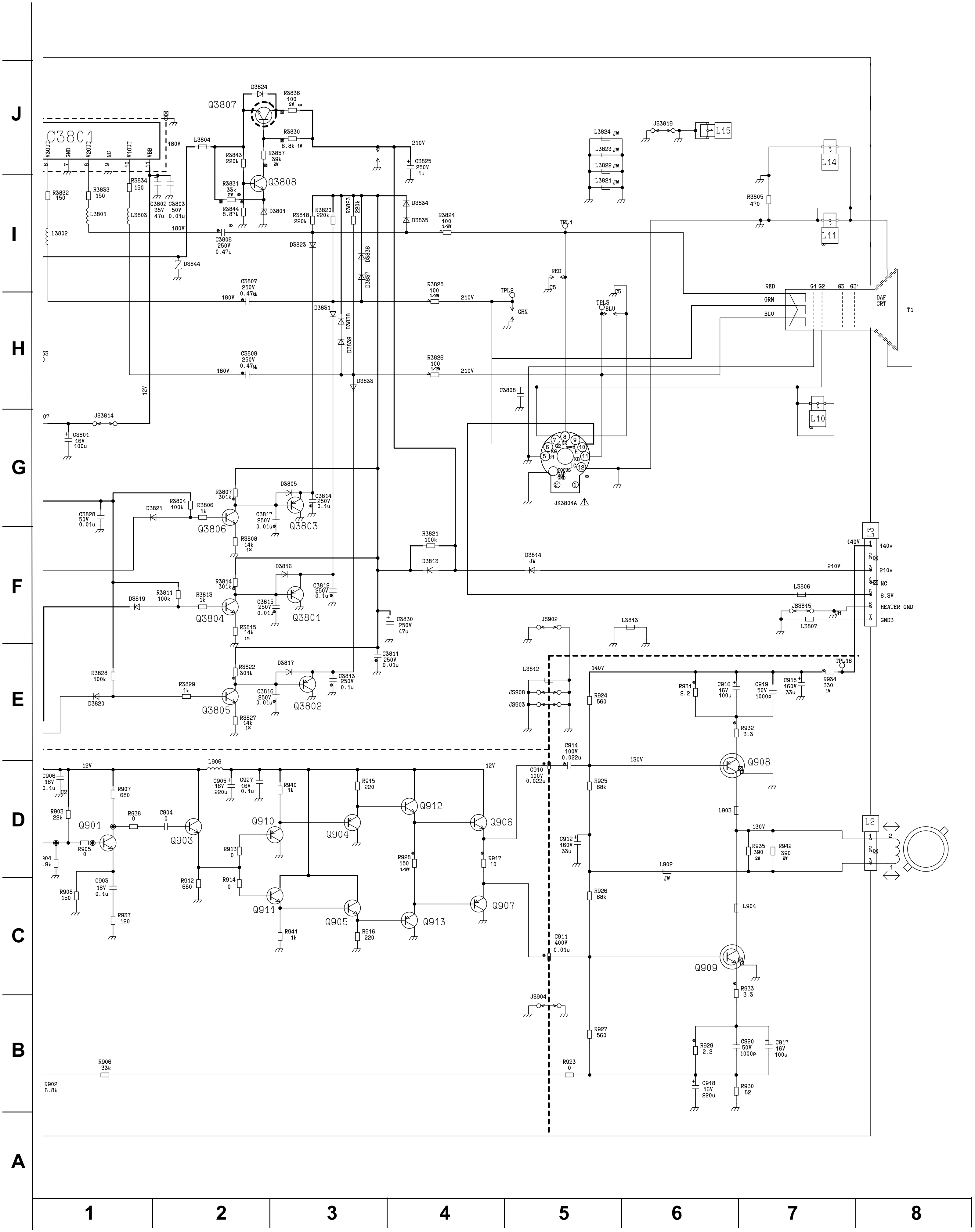
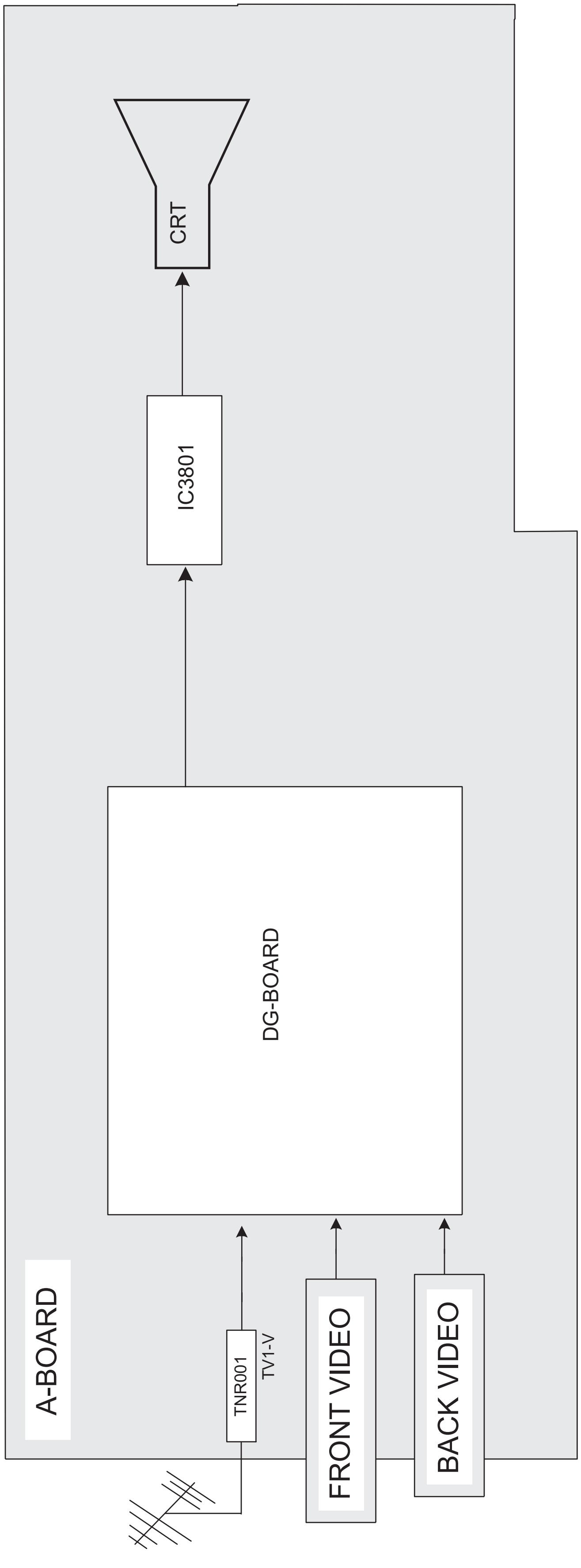
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
IC3801
V3OUT
GND
V2OUT
NC
V1OUT
VBB
180V
L3804
D3824
Q3807
R3836 100 2W
R3830 6.8k 1W
R3843 220k
R3857 39k 2W
210V
C3825 250V 1u
R3831 33k 2W
Q3808
R3844 8.87k
D3801
R3832 150
R3833 150
R3834 150
C3802 35V 47u
C3803 50V 0.01u
L3801
L3803
L3802
C3806 250V 0.47u
D3844
R3818 220k
R3820 220k
R3823 220k
D3834
D3835
R3824 100 1/2W
D3823
D3836
D3837
TPL1
L3824 JW
L3823 JW
L3822 JW
L3821 JW
JS3819
L15
L14
R3805 470
L11
RED
GRN
BLU
G1 G2
G3 G3'
DAF CRT
T1
C3807 250V 0.47u
R3825 100 1/2W
TPL2
TPL3
C5
D3831
D3838
D3839
C3809 250V 0.47u
R3826 100 1/2W
D3833
C3808
L10
12V
JS3814
C3801 16V 100u
FOCUS GAP GND
JK3804A
C3828 50V 0.01u
D3821
R3804 100k
R3806 1k
R3807 301k
Q3806
D3805
C3814 250V 0.1u
C3817 250V 0.01u
Q3803
R3808 14k 1%
R3821 100k
D3813
D3814 JW
L3
140V
140v
210v
NC
6.3V
HEATER GND
GND3
L3806
JS3815
L3807
D3816
R3814 301k
R3811 100k
D3819
R3813 1k
Q3804
C3815 250V 0.01u
C3812 250V 0.1u
Q3801
R3815 14k 1%
C3830 250V 47u
C3811 250V 0.01u
R3828 100k
D3817
R3822 301k
R3829 1k
D3820
Q3805
C3816 250V 0.01u
C3813 250V 0.1u
Q3802
R3827 14k 1%
JS902
L3813
L3812
JS908
JS903
TPL16
R931 2.2
C916 16V 100u
C919 50V 1000p
C915 160V 33u
R934 330 1W
R924 560
R932 3.3
C914 100V 0.022u
130V
Q908
C906 16V 0.1u
L906
C905 16V 220u
C927 16V 0.1u
R940 1k
R915 220
R907 680
C910 100V 0.022u
R925 68k
R903 22k
Q901
R938 0
C904
Q903
Q910
Q904
Q912
Q906
L903
L2
R905 0
R913 0
R928 150 1/2W
R917 10
C912 160V 33u
R935 390 2W
R942 390 2W
R904
L902 JW
C903 16V 0.1u
R912 680
R914 0
R908 150
Q911
Q905
Q913
Q907
R926 68k
L904
R937 120
R941 1k
R916 220
C911 400V 0.01u
Q909
JS904
R933 3.3
R927 560
R929 2.2
C920 50V 1000p
C917 16V 100u
R906 33k
R923 0
R902 6.8k
C918 16V 220u
R930 82


CRT
IC3801
DG-BOARD
A-BOARD
TNR001
TV1-V
FRONT VIDEO
BACK VIDEO

**VIDEO BLOCK DIAGRAM CT-32HL44J/UJ**

## A-BOARD - TNP2AH061AD

| IC1501 | |
|---|---|
| 1 | 5.39 |
| 2 | 1.56 |
| 3 | 1.47 |
| 4 | 0.00 |
| 5 | 6.27 |
| 6 | 5.88 |
| 7 | 4.10 |
| 8 | 11.93 |

| IC1502 | |
|---|---|
| 1 | 6.27 |
| 2 | 4.19 |
| 3 | 4.19 |
| 4 | 0.00 |
| 5 | 8.12 |
| 6 | 8.12 |
| 7 | 8.12 |
| 8 | 11.93 |

| IC1503 | |
|---|---|
| 1 | 6.08 |
| 2 | 4.08 |
| 3 | 3.25 |
| 4 | 0.00 |
| 5 | 4.09 |
| 6 | 0.00 |
| 7 | 2.24 |
| 8 | 11.93 |

| IC2856 | |
|---|---|
| 1 | 15.27 |
| 2 | 3.28 |
| 3 | 0.00 |
| 4 | 1.25 |
| 5 | 6.71 |

| IC2857 | |
|---|---|
| 1 | 15.27 |
| 2 | 2.42 |
| 3 | 0.00 |
| 4 | 1.26 |
| 5 | 6.71 |

| IC2201 | |
|---|---|
| 1 | 0.00 |
| 2 | 0.00 |
| 3 | 0.00 |
| 4 | 2.25 |
| 5 | 2.19 |
| 6 | 0.00 |
| 7 | 4.98 |
| 8 | 2.34 |
| 9 | 2.53 |
| 10 | 0.00 |
| 11 | 2.24 |
| 12 | 3.33 |
| 13 | 3.41 |
| 14 | 2.18 |
| 15 | 3.43 |
| 16 | 3.52 |
| 17 | 0.00 |
| 18 | 4.72 |
| 19 | 4.69 |
| 20 | 0.00 |
| 21 | 2.22 |
| 22 | 2.22 |
| 23 | 0.00 |
| 24 | 0.00 |

| IC2301 | |
|---|---|
| 1 | -16.73 |
| 2 | -16.73 |
| 3 | 0.00 |
| 4 | 17.51 |
| 5 | 9.28 |
| 6 | 4.99 |
| 7 | 0.00 |
| 8 | 2.55 |
| 9 | 0.00 |
| 10 | 0.00 |
| 11 | 0.00 |
| 12 | 5.26 |
| 13 | 0.00 |
| 14 | -15.51 |
| 15 | 0.00 |
| 16 | -5.44 |
| 17 | 0.00 |
| 18 | 0.00 |
| 19 | 0.00 |
| 20 | 0.00 |
| 21 | 9.25 |
| 22 | 17.51 |
| 23 | 0.00 |
| 24 | -16.73 |
| 25 | -6.28 |

| IC2451 | | | |
|---|---|---|---|
| 1 | 4.45 | 16 | 8.91 |
| 2 | 0.00 | 17 | 4.88 |
| 3 | 4.48 | 18 | 0.00 |
| 4 | 4.45 | 19 | 3.84 |
| 5 | 4.46 | 20 | 3.84 |
| 6 | 4.49 | 21 | 4.45 |
| 7 | 4.49 | 22 | 4.49 |
| 8 | 4.49 | 23 | 4.49 |
| 9 | 1.34 | 24 | 4.49 |
| 10 | 4.49 | 25 | 4.49 |
| 11 | 1.47 | 26 | 4.84 |
| 12 | 1.43 | 27 | 4.84 |
| 13 | 4.67 | 28 | 4.27 |
| 14 | 4.73 | 29 | 4.50 |
| 15 | 0.00 | 30 | 4.45 |

| IC006 | |
|---|---|
| 1 | 4.94 |
| 2 | 4.94 |
| 3 | 4.20 |
| 4 | 3.18 |
| 5 | 5.16 |
| 6 | 2.42 |
| 7 | 2.91 |
| 8 | 0.00 |
| 9 | 0.00 |
| 10 | 8.00 |
| 11 | 8.88 |
| 12 | 0.00 |
| 13 | 8.90 |
| 14 | 4.70 |
| 15 | 4.74 |
| 16 | 8.88 |

| IC1401 | |
|---|---|
| 1 | 0.00 |
| 2 | 2.13 |
| 3 | 1.27 |
| 4 | 0.00 |
| 5 | 0.50 |
| 6 | 1.27 |
| 7 | 0.00 |
| 8 | 8.91 |

| IC2305 | |
|---|---|
| 1 | 7.76 |
| 2 | 0.00 |
| 3 | 0.00 |
| 4 | 0.00 |
| 5 | 4.49 |
| 6 | 4.44 |
| 7 | 4.44 |
| 8 | 8.91 |

| IC002 | |
|---|---|
| 1 | 0.00 |
| 2 | 0.00 |
| 3 | 0.00 |
| 4 | 0.00 |
| 5 | 3.28 |
| 6 | 3.29 |
| 7 | 0.00 |
| 8 | 3.28 |

| IC2851 | |
|---|---|
| 1 | 14.87 |
| 2 | 11.94 |
| 3 | 0.00 |
| 4 | 9.62 |

## A-BOARD - TNP2AH061AD

| | Q002 | Q013 | Q804 | Q1401 | Q1501 | Q1502 |
|---|---|---|---|---|---|---|
| B | 2.97 | 2.25 | 4.27 | 0.00 | 6.06 | 6.06 |
| E | 0.00 | 7.35 | 0.50 | 8.91 | 11.93 | 0.00 |
| C | 0.00 | 4.94 | 0.00 | 0.00 | 6.13 | 6.12 |

| | Q1504 | Q1505 | Q1511 | Q1512 | Q2301 | Q2302 |
|---|---|---|---|---|---|---|
| B | 0.00 | 9.15 | 5.39 | 5.40 | 0.00 | 0.00 |
| E | 5.87 | 5.87 | 11.31 | 0.00 | 0.00 | 15.26 |
| C | 0.00 | 9.76 | 5.22 | 5.22 | 0.00 | 0.00 |

| | Q2303 | Q2304 | Q2306 | Q2307 | Q2310 | Q2314 |
|---|---|---|---|---|---|---|
| B | 0.00 | 0.00 | 15.26 | 0.00 | 15.26 | 0.00 |
| E | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 15.26 |
| C | 0.00 | 0.00 | 10.47 | 0.00 | 10.47 | 0.00 |

| | Q2317 | Q2318 | Q2881 |
|---|---|---|---|
| B | 0.00 | 0.00 | 3.27 |
| E | 0.00 | 0.00 | 0.00 |
| C | 0.00 | 0.00 | 3.28 |

## D-BOARD - TNP2AH062AD

| IC507 | |
|---|---|
| 1 | 0.00 |
| 2 | 0.00 |
| 3 | 0.00 |
| 4 | 0.00 |
| 5 | 3.18 |
| 6 | 3.05 |
| 7 | 3.62 |
| 8 | 11.93 |

| IC805 | |
|---|---|
| 1 | 34.00 |
| 2 | 7.31 |
| 3 | 0.00 |
| 4 | 1.25 |
| 5 | 4.46 |

| IC500 | |
|---|---|
| 1 | 99.40 |
| 2 | 99.40 |
| 3 | 99.40 |
| 4 | 102.50 |
| 5 | 91.40 |
| 6 | 98.70 |
| 7 | 98.70 |
| 8 | 103.90 |
| 9 | 99.80 |
| 10 | 104.90 |

| IC501 | |
|---|---|
| R | 0.00 |
| A | 0.00 |
| K | 11.92 |

| IC451 | |
|---|---|
| 1 | -16.03 |
| 2 | -16.04 |
| 3 | -16.03 |
| 4 | 0.72 |
| 5 | 15.90 |
| 6 | -14.50 |
| 7 | 9.98 |
| 8 | -5.62 |
| 9 | 0.00 |
| 10 | -12.44 |
| 11 | 0.00 |
| 12 | 0.98 |
| 13 | 0.99 |
| 14 | 0.00 |
| 15 | 14.98 |
| 16 | 14.98 |
| 17 | -16.03 |
| 18 | -16.04 |
| 19 | -16.04 |
| 20 | -16.03 |

| IC502 | |
|---|---|
| 1 | 2.52 |
| 2 | 11.87 |
| 3 | 1.99 |
| 4 | 1.31 |
| 5 | 4.05 |
| 6 | 0.00 |
| 7 | 0.00 |
| 8 | 0.00 |
| 9 | 0.00 |
| 10 | 11.87 |
| 11 | 7.34 |
| 12 | 7.34 |
| 13 | 2.71 |
| 14 | 0.00 |
| 15 | 0.00 |
| 16 | 0.00 |

| IC802 | |
|---|---|
| 1 | 131.00 |
| 2 | 11.98 |
| 3 | 0.00 |

## D-BOARD - TNP2AH062AD

| | Q404 | Q405 | Q406 | Q459 | Q511 | Q512 | Q513 | Q514 |
|---|---|---|---|---|---|---|---|---|
| B | 0.65 | 0.00 | 0.66 | 3.61 | 6.76 | 7.30 | 0.68 | 0.71 |
| E | 0.00 | 11.05 | 0.00 | 78.40 | 0.00 | 11.91 | 0.00 | 0.00 |
| C | 0.00 | 0.00 | 0.00 | 3.05 | 7.34 | 6.76 | 0.00 | 0.00 |

| | Q515 | Q516 | Q551 | Q702 | Q703 | Q704 | Q820 | Q821 |
|---|---|---|---|---|---|---|---|---|
| B | 11.10 | 0.70 | 0.00 | 0.54 | 2.06 | 2.06 | -15.39 | 14.76 |
| E | 11.87 | 0.00 | -0.98 | 2.07 | 11.93 | 0.00 | -16.06 | 15.35 |
| C | 11.91 | 0.00 | 0.00 | 0.00 | 2.13 | 2.13 | -16.10 | 15.44 |

| | Q822 | Q823 | Q824 | Q825 | Q826 | Q827 | Q831 |
|---|---|---|---|---|---|---|---|
| B | 14.02 | 0.70 | 14.66 | 0.00 | 0.70 | 139.10 | 15.03 |
| E | 14.63 | 0.00 | 15.37 | 1.15 | 0.00 | 0.00 | 0.00 |
| C | 14.82 | 0.00 | 15.43 | 0.00 | 0.00 | 139.50 | 15.35 |

| | Q501 | Q560 | Q701 |
|---|---|---|---|
| G | 5.22 | 207.50 | 2.13 |
| D | 8.77 | 98.80 | 24.15 |
| S | 0.00 | 210.40 | 0.00 |

## L-BOARD - TNP2AA169

| IC3801 | |
|---|---|
| 1 | 2.35 |
| 2 | 178.70 |
| 3 | 2.25 |
| 4 | 0.00 |
| 5 | 2.31 |
| 6 | 126.00 |
| 7 | 0.00 |
| 8 | 129.10 |
| 9 | 0.00 |
| 10 | 125.00 |
| 11 | 11.15 |

## L-BOARD - TNP2AA169

| | Q3806 | Q3804 | Q3805 | Q3802 | Q901 | Q903 | Q904 |
|---|---|---|---|---|---|---|---|
| B | 2.50 | 2.22 | 2.08 | 174.70 | 1.59 | 6.77 | 6.74 |
| E | 166.80 | 172.90 | 0.00 | 0.00 | 0.00 | 11.01 | 0.00 |
| C | 1.96 | 1.68 | 1.55 | 180.20 | 0.94 | 6.11 | 7.38 |

| | Q910 | Q911 | Q905 | Q912 | Q906 | Q907 | Q913 |
|---|---|---|---|---|---|---|---|
| B | 6.11 | 6.12 | 5.49 | 7.38 | 6.75 | 5.53 | 4.86 |
| E | 0.00 | 0.00 | 10.92 | 10.92 | 10.92 | 0.00 | 0.00 |
| C | 6.74 | 5.49 | 4.85 | 6.74 | 6.16 | 6.12 | 5.53 |

| | Q900 | Q909 | Q908 | Q3808 | Q3809 | Q3810 | Q3811 |
|---|---|---|---|---|---|---|---|
| B | 0.00 | 0.99 | 137.10 | 6.73 | 2.34 | 2.24 | 2.29 |
| E | 0.00 | 63.00 | 62.60 | 9.40 | 0.00 | 0.00 | 0.00 |
| C | 0.00 | 0.50 | 137.70 | 6.12 | 3.00 | 2.89 | 2.95 |

| | Q3814 | Q3813 | Q3812 | Q3807 |
|---|---|---|---|---|
| B | 2.95 | 2.89 | 2.99 | 179.20 |
| E | 11.05 | 0.00 | 11.05 | 207.50 |
| C | 2.32 | 2.27 | 0.00 | 178.70 |

## G-BOARD - TNP2AA170AD

| IC5801 | |
|---|---|
| 1 | 4.10 |
| 2 | 0.00 |
| 3 | 2.40 |
| 4 | 0.00 |
| 5 | 4.11 |
| 6 | 7.94 |
| 7 | 4.00 |
| 8 | 8.91 |

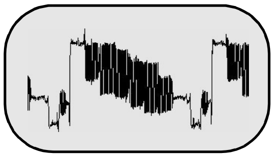
| IC5802 | |
|---|---|
| 1 | -1.47 |
| 2 | -1.47 |
| 3 | 0.00 |
| 4 | 0.00 |
| 5 | -16.13 |
| 6 | 2.91 |
| 7 | 2.91 |
| 8 | 2.91 |
| 9 | 2.91 |
| 10 | 15.43 |

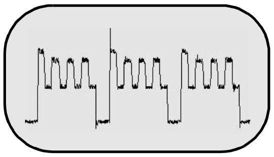
## DF-BOARD - TNP2AA172AB

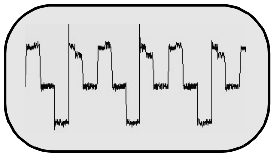
| | Q563 | Q564 | Q566 | Q565 |
|---|---|---|---|---|
| B | 1.27 | 0.81 | 0.50 | 2.82 |
| E | 147.40 | 0.73 | 2.86 | 11.49 |
| C | 0.99 | 0.00 | 0.00 | 3.08 |

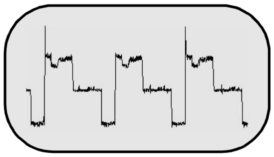
| | Q562 | Q561 |
|---|---|---|
| G | 8.00 | 3.07 |
| D | 47.57 | 102.00 |
| S | 0.00 | 0.00 |

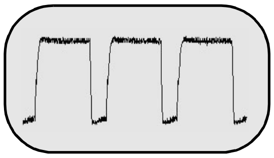
# A-Board TNP2AH061AD

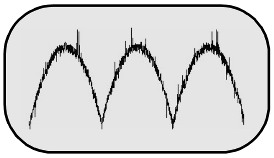

① **1.0 Vp-p**
TNR001 (MAIN VIDEO)

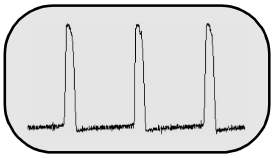

② **3.08 Vp-p**
L1 PIN 2 (BLUE OUT)

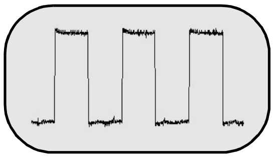

③ **2.68 Vp-p**
L1 PIN 4 (RED OUT)

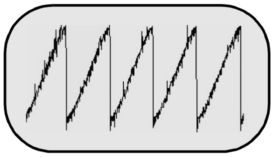

④ **2.76 Vp-p**
L1 PIN 6 (GREEN OUT)

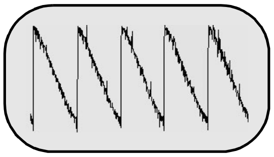

⑤ **3.20 Vp-p**
A8 PIN 1

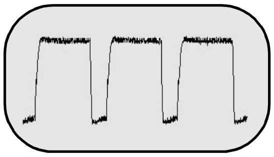

⑥ **0.88 Vp-p**
A8 PIN 3 (V-DAF)

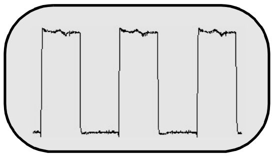

⑦ **3.12 Vp-p**
A8 PIN 13 (FBP)

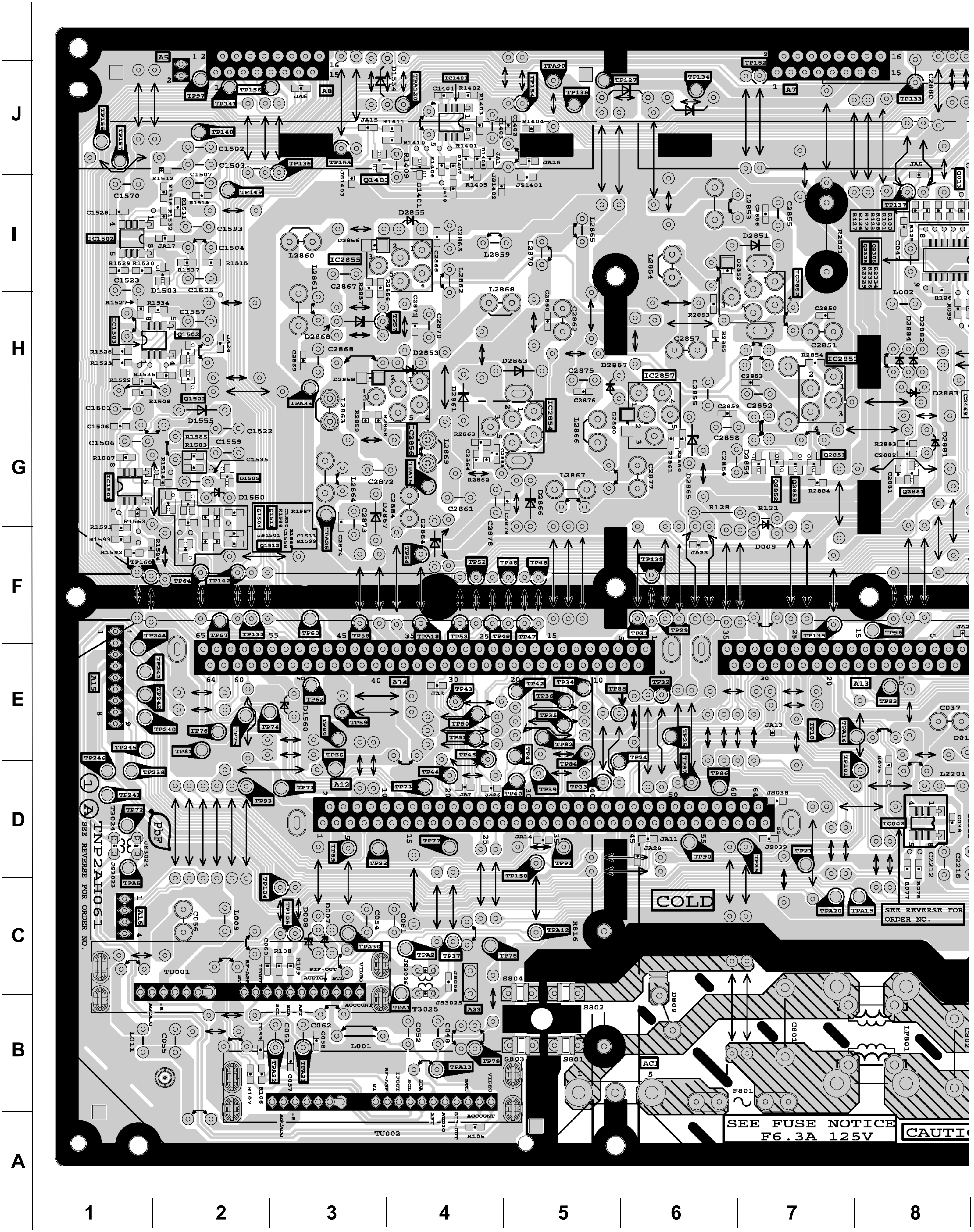

⑧ **11.3 Vp-p**
A8 PIN 16 (H DRIVE)

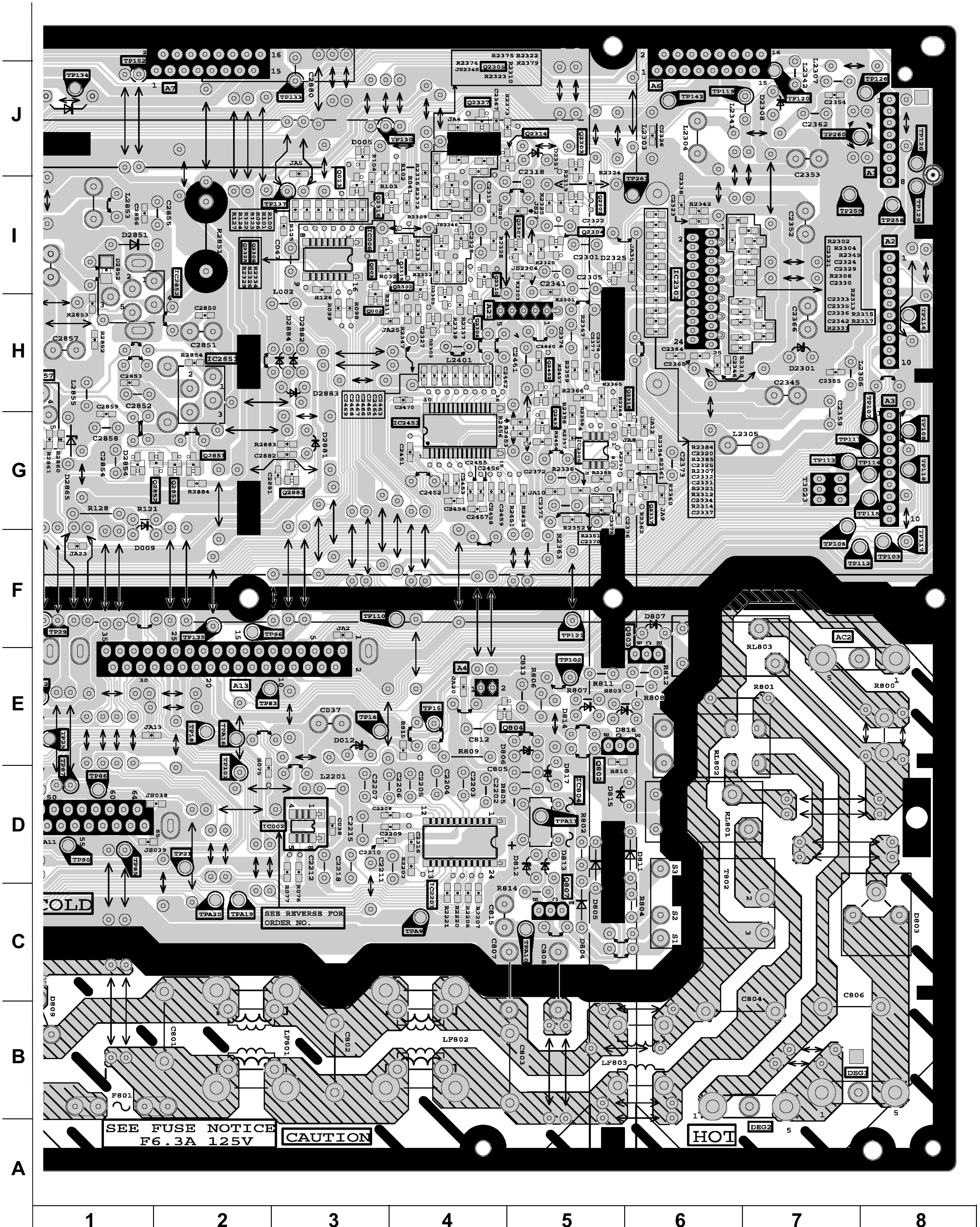

⑨ **1.74 Vp-p**
A7 PIN 4 (V_DRIVE)


⑩ **1.98 Vp-p**
A7 PIN 7 (V_DRIVE)


⑪ **3.28 Vp-p**
A7 PIN 9


⑫ **11.4 Vp-p**
A6 PIN 4

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
TNP2AH061
SEE REVERSE FOR ORDER NO.
COLD
SEE REVERSE FOR ORDER NO.
SEE FUSE NOTICE
F6.3A 125V
CAUTIO
TU001
TU002
F801
A1
A5
A7
A8
A12
A13
A14
A15
A16
A23
AC1



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SEE FUSE NOTICE
F6.3A 125V
CAUTION
HOT
COLD
SEE REVERSE FOR
ORDER NO.
F801
LF801
LF802
LF803
C801
C802
C803
C804
C806
D803
D809
DEG1
DEG2
RL801
RL802
RL803
R800
R801
T802
AC2
S1
S2
S3
IC2851
IC2451
IC2301
IC2305
IC002
IC006
IC2201
IC804
A1
A2
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A6
A7
A13
A21
TP102
TP103
TP106
TP110
TP121
TP133
TP134
TP135
TP137
TP152
TP262
Q2305
Q2327
Q2314
Q804
Q802
Q807
Q803
D807
D816
R2375 R2322
R2374 R2379
JS2345
R2323 R2310
L2401
L2201
L2305
L2306
L2853
L2855
C2851
C2852
C2857
C037
TPA9
TPA10
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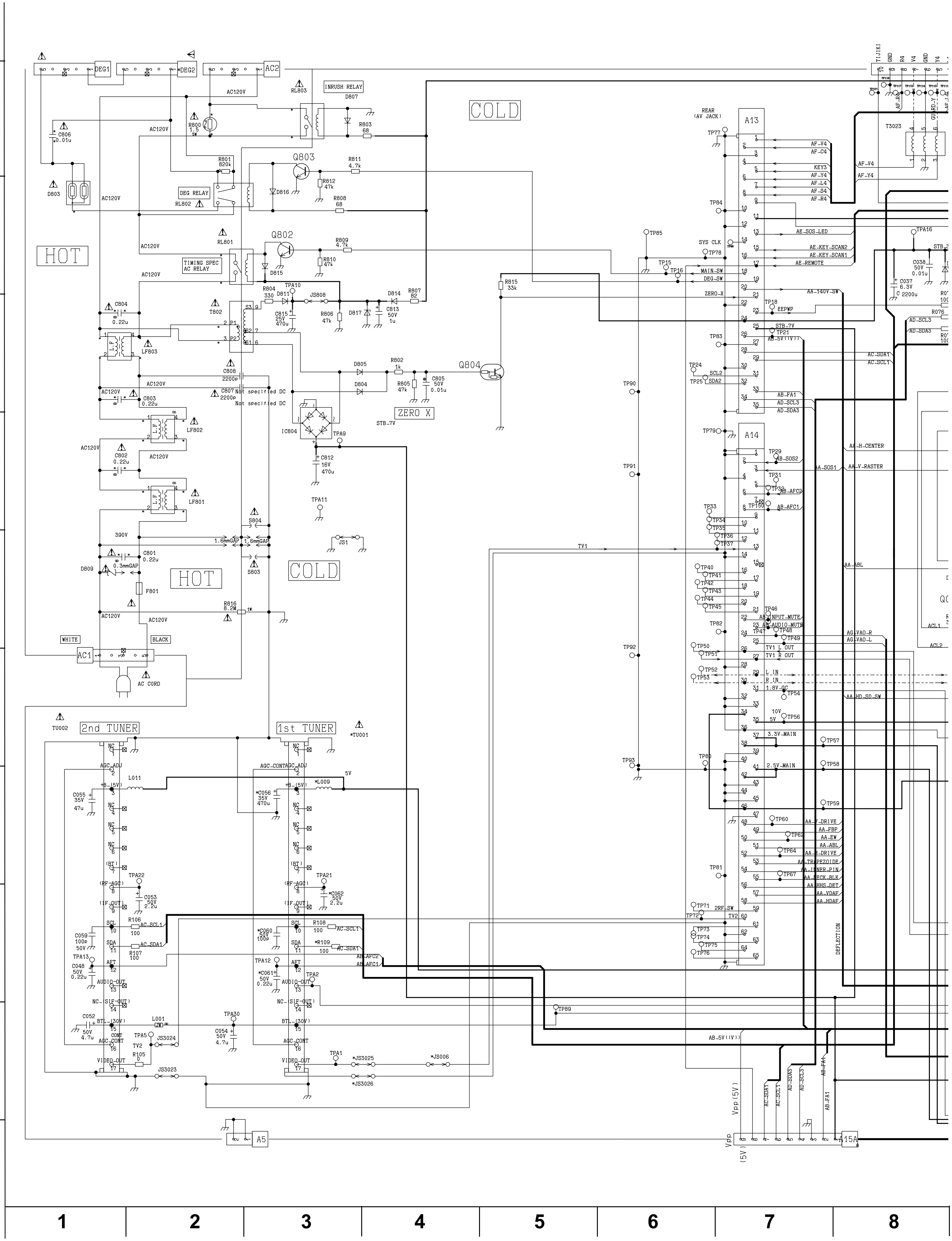
TPA19
TPA20
JS038
JS039


J
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C
B
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1
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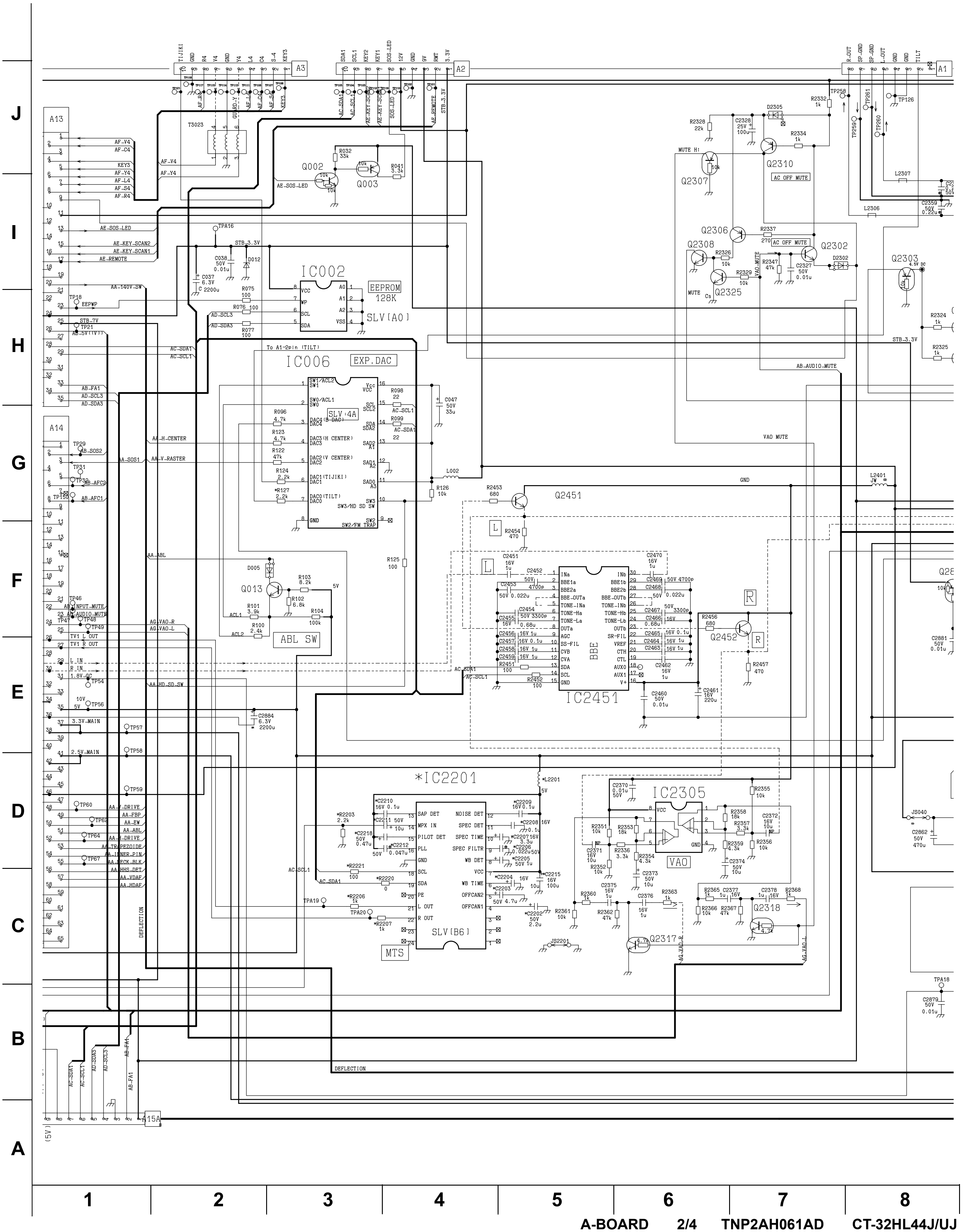
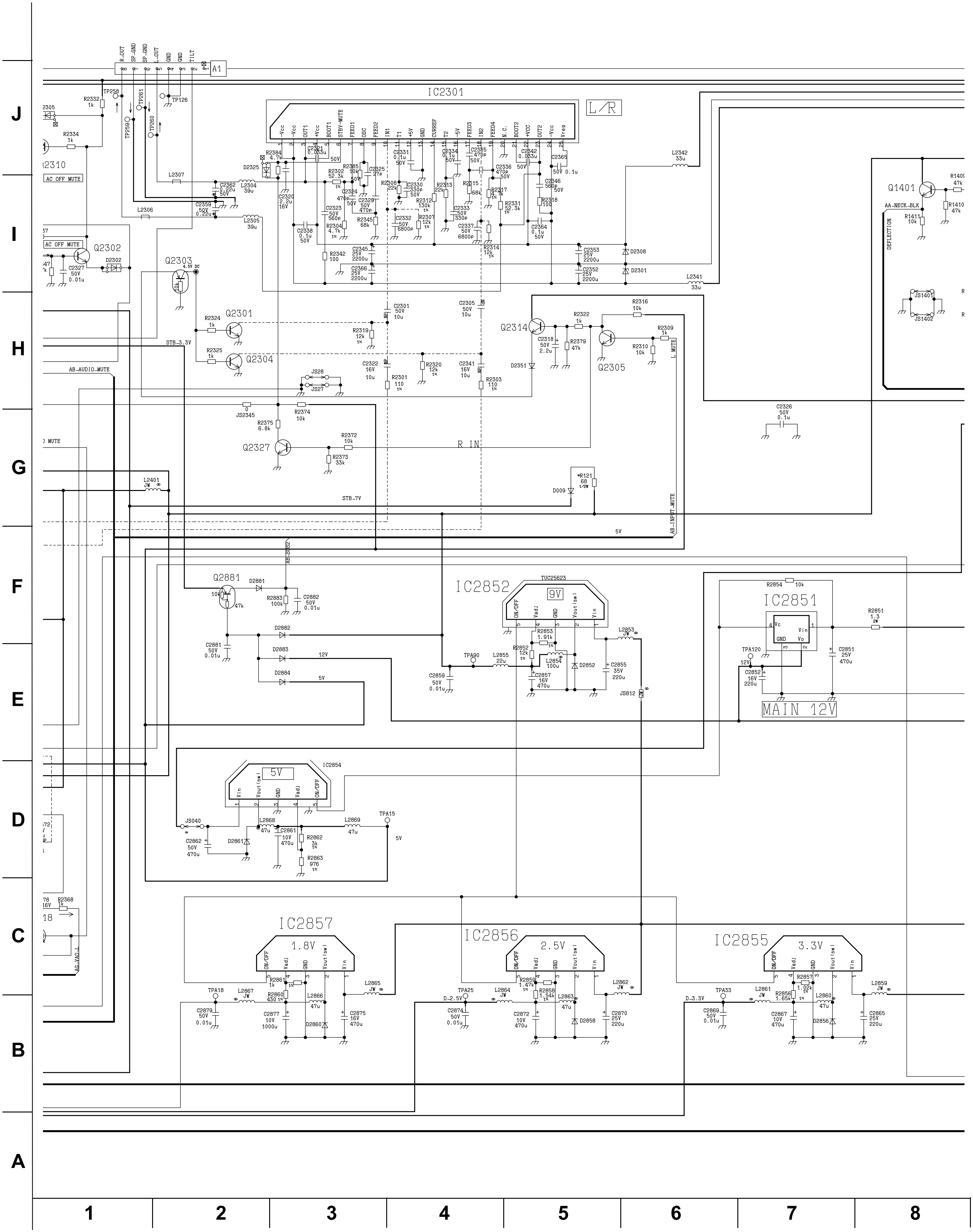
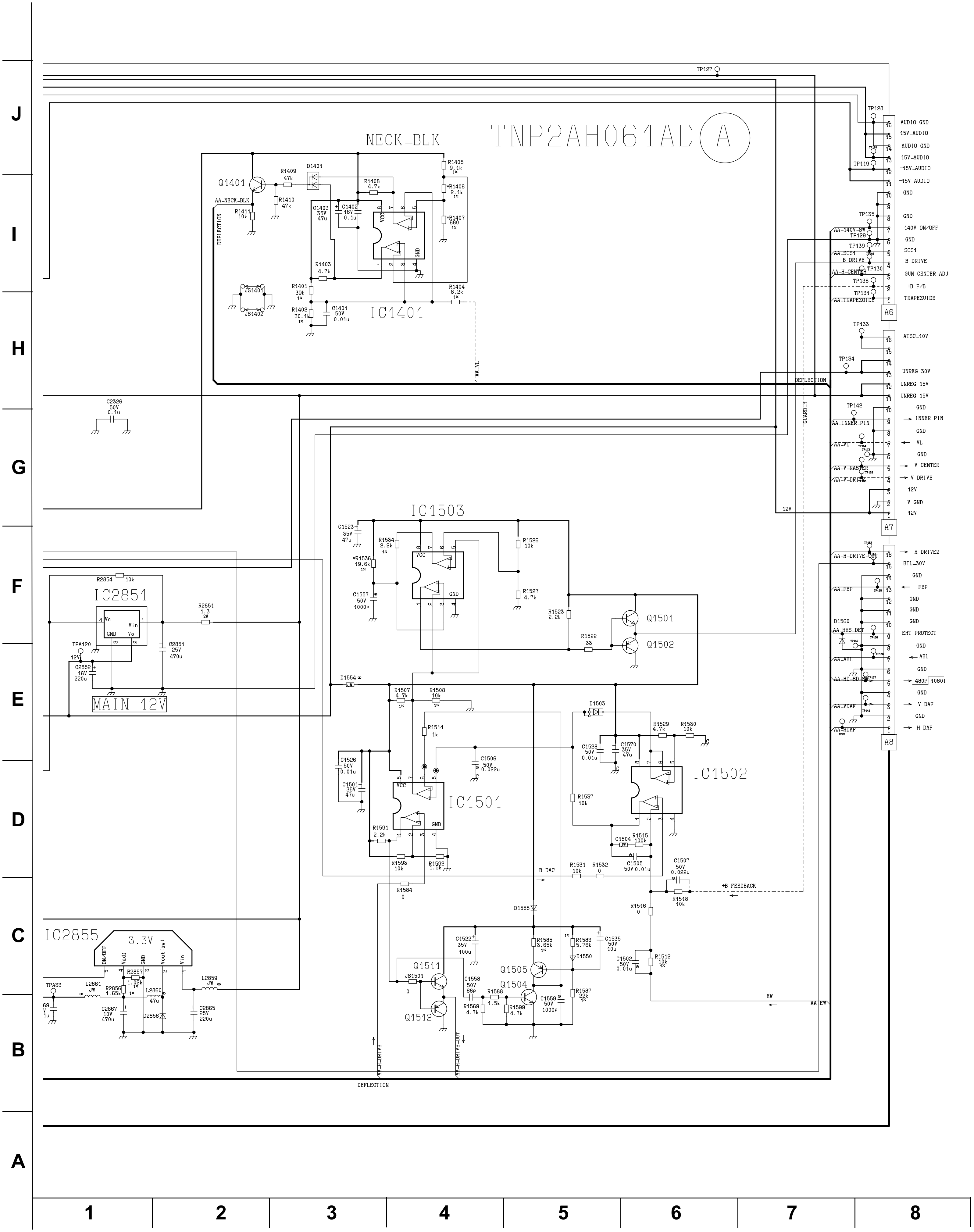
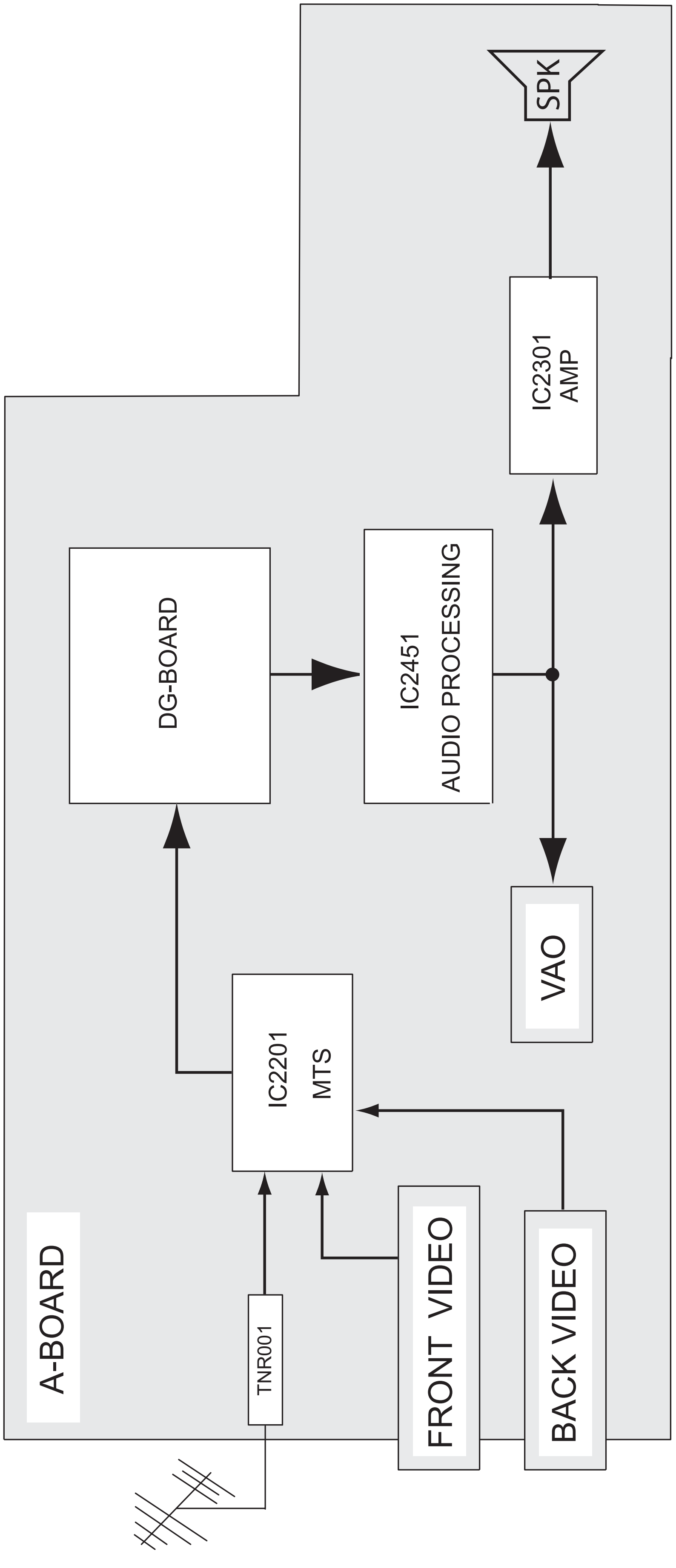
4
5
6
7
8
DEG1
*DEG2
AC2
INRUSH RELAY
RL803
D807
AC120V
R800 1.5 5W
C806 .01u
R803 68
COLD
HOT
R801 820k
Q803
R811 4.7k
R812 47k
R808 68
DEG RELAY
RL802
D803
D816
RL801
Q802
R809 4.7k
R810 47k
TIMING SPEC AC RELAY
D815
R804 330
TPA10
D811
JS808
D814
R807 82
C804 0.22u
T802
C815 25V 470u
R806 47k
D817
C813 50V 1u
LF803
R815 33k
C808 2200p
D805
R802 1k
Q804
R805 47k
C805 50V 0.01u
C807 2200p
Not specified DC
ZERO X
STB-7V
C803 0.22u
IC804
TPA9
LF802
C802 0.22u
C812 16V 470u
LF801
TPA11
S804
390V
1.6mmGAP
JS1
C801 0.22u
D809
0.3mmGAP
S803
F801
R816 8.2M 1W
WHITE
BLACK
AC1
AC CORD
TU002
2nd TUNER
1st TUNER
*TU001
NC
AGC-ADJ
AGC-CONT
+B-(5V)
L011
*L009
5V
C055 35V 47u
*C056 35V 470u
(BT)
(RF-AGC)
(IF-OUT)
TPA22
TPA21
C053 50V 2.2u
*C062 50V 2.2u
SCL
SDA
R106 100
R107 100
R108 100
R109 100
AC-SCL1
AC-SDA1
C059 100p 50V
*C060 50V 100p
AFT
TPA13
TPA12
C048 50V 0.22u
*C061 50V 0.22u
AUDIO-OUT
NC-(SIF-OUT)
TPA2
AB-AFC2
AB-AFC1
C052 50V 4.7u
BTL-(30V)
L001
TPA30
C054 50V 4.7u
TPA5
TV2
JS3024
AGC-CONT
R105 0
VIDEO-OUT
JS3023
TPA1
*JS3025
*JS006
*JS3026
A5
TP89
AB-5V((V))
REAR (AV JACK)
A13
TP77
TP84
TP85
TP15
TP16
SYS CLK
TP78
MAIN-SW
DEG-SW
ZERO-X
TP18
EEPWP
STB-7V
TP21
AB-5V((V))
TP83
TP24
TP25
SCL2
SDA2
TP90
AF-V4
AF-C4
KEY3
AF-Y4
AF-L4
AF-S4
AF-R4
AE-SOS-LED
AE-KEY-SCAN2
AE-KEY-SCAN1
AE-REMOTE
AA-140V-SW
AC-SDA1
AC-SCL1
AB-FA1
AD-SCL3
AD-SDA3
TP79
A14
TP29
AB-SOS2
AA-SOS1
TP31
TP32
AB-AFC2
TP150
AB-AFC1
TP91
TP33
TP34
TP35
TP36
TP37
TV1
TP40
TP41
TP42
TP43
TP44
TP45
TP46
AB-INPUT-MUTE
AB-AUDIO-MUTE
TP47
TP48
TP49
TP82
TP92
TP50
TP51
TV1 L OUT
TV1 R OUT
TP52
TP53
L-IN
R-IN
1.8V-GC
TP54
10V
5V
TP56
3.3V-MAIN
TP57
TP93
TP80
2.5V-MAIN
TP58
TP59
TP60
TP62
TP64
TP67
TP81
TP71
TP72
2RF-SW
TP73
TP74
TP75
TP76
AA-H-CENTER
AA-V-RASTER
AA-ABL
AG-VAO-R
AG-VAO-L
AA-HD-SD-SW
AA-V-DRIVE
AA-FBP
AA-EW
AA-ABL
AA-H-DRIVE
AA-TRAPEZOIDE
AA-INNER-PIN
AA-NECK-BLK
AA-HHS-DET
AA-VDAF
AA-HDAF
DEFLECTION
Vpp(5V)
Vpp (5V)
AC-SDA1
AC-SCL1
AD-SDA3
AD-SCL3
AB-FA1
A15A
TIJIKI
GND
R4
V4
Y4
T3023
AF-R4
GUARD-Y
AF-V4
AF-Y4
TPA16
STB
C038 50V 0.01u
C037 6.3V 2200u
R076
AD-SCL3
AD-SDA3
ACL1
ACL2

A-BOARD 1/4 TNP2AH061AD CT-32HL44J/UJ

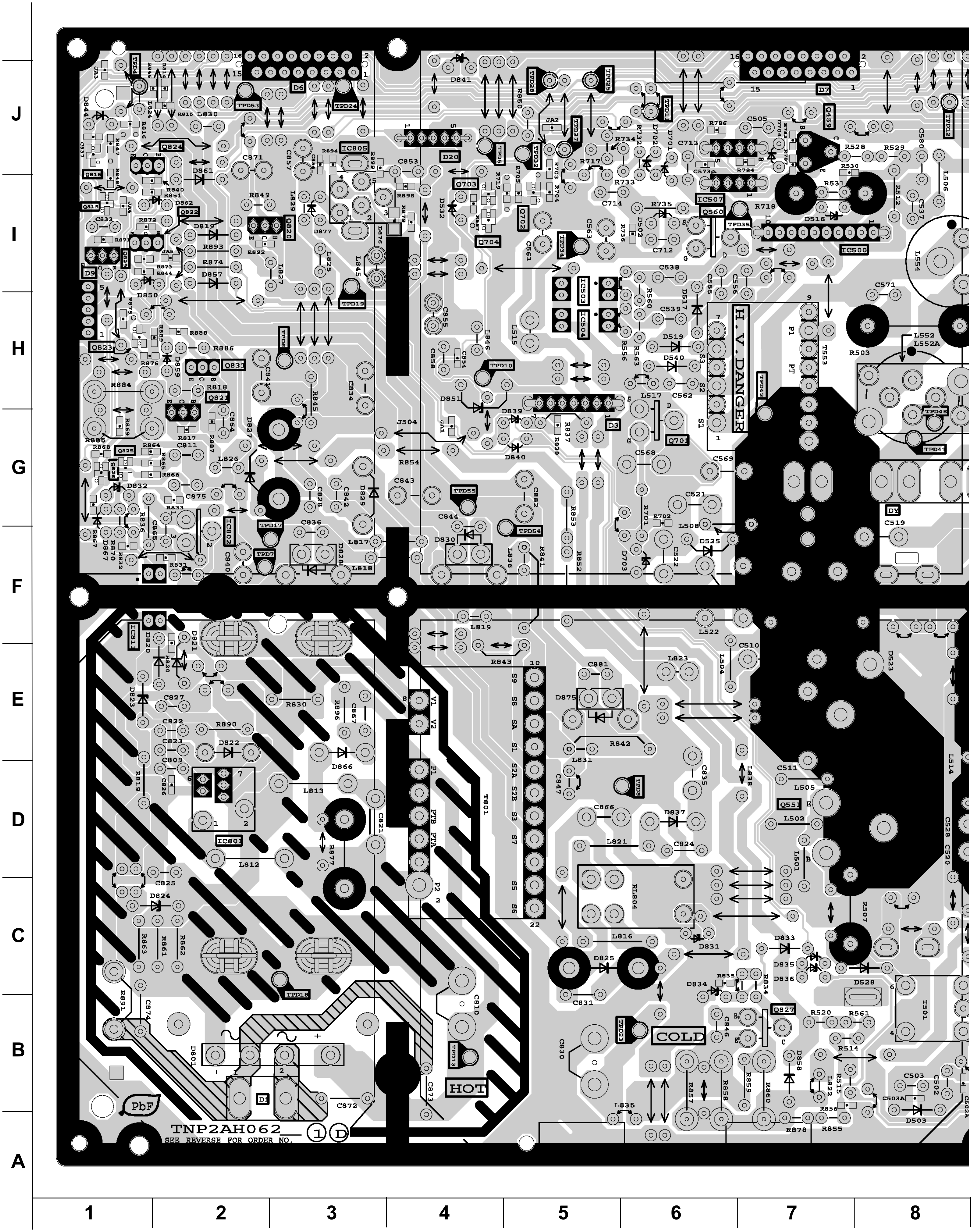

IC002
EEPROM
128K
SLV[A0]
IC006
EXP.DAC
SLV:4A
ABL SW
IC2451
BBE
*IC2201
SLV[B6]
MTS
IC2305
VAO
Q002
Q003
Q013
Q2451
Q2452
Q2302
Q2303
Q2306
Q2307
Q2308
Q2310
Q2317
Q2318
Q2325
AC OFF MUTE
MUTE HI
VAO MUTE
AB-AUDIO-MUTE
STB-3.3V
DEFLECTION
A1
A2
A3
A13
A14
A15A
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8

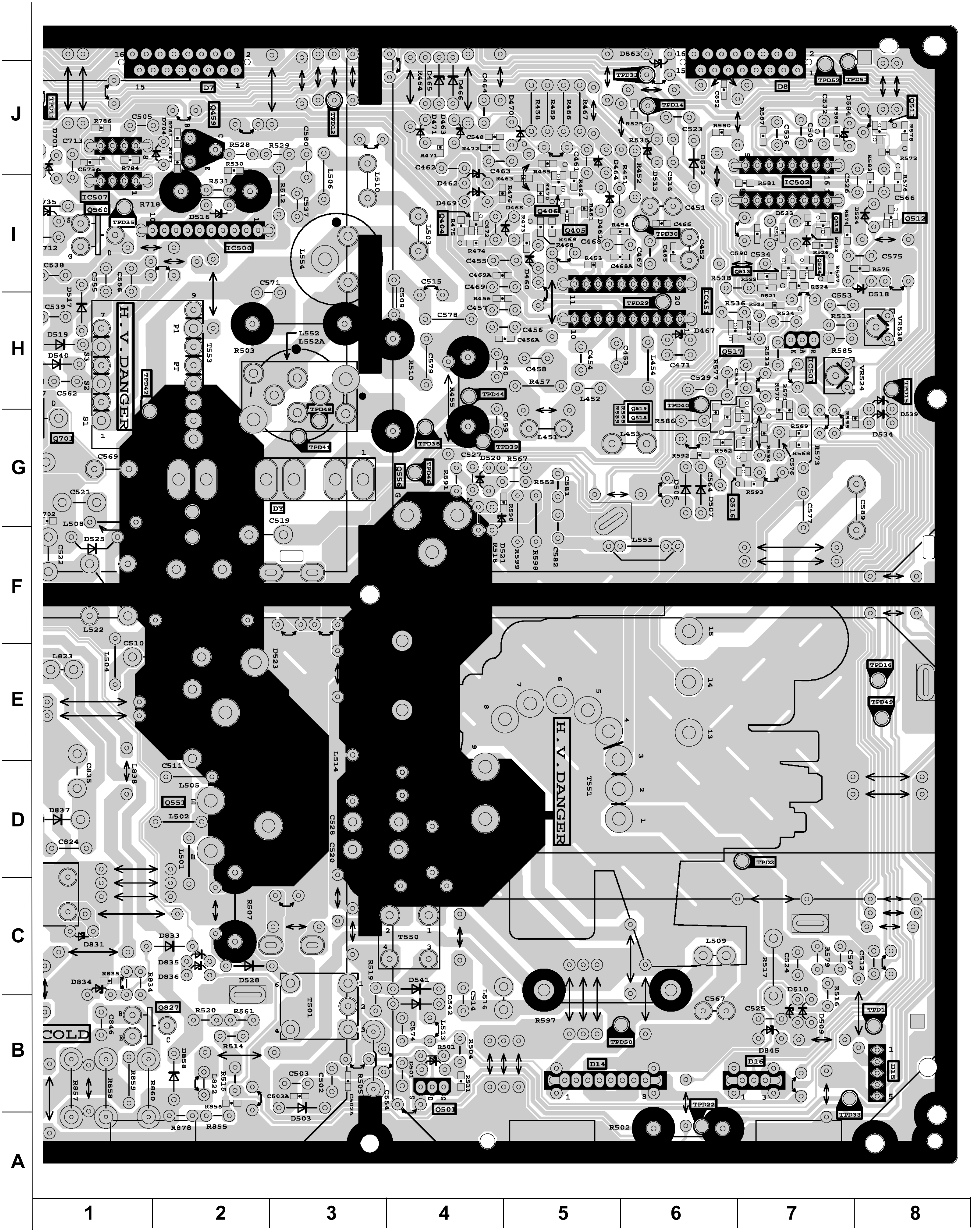

R-OUT
SP-GND
SP-GND
L-OUT
GND
GND
TILT
A1
IC2301
L/R
-Vcc
OUT1
+Vcc
BOOT1
STBY-MUTE
FEED1
OSC
FEED2
IN1
T1
+5V
GND
CURREF
T2
-5V
FEED3
IN2
FEED4
N.C.
BOOT2
+VCC
OUT2
Vreg
AC OFF MUTE
Q2302
Q2303
4.5V DC
Q2301
Q2304
Q2314
Q2305
Q2327
R IN
L MUTE
STB-3.3V
AB-AUDIO-MUTE
STB-7V
5V
AB-INPUT-MUTE
AB-5052
L2341
L2342
Q1401
AA-NECK-BLK
DEFLECTION
JS1401
JS1402
C2326
Q2881
IC2852
TUC25623
9V
ON/OFF
Vadj
GND
Vout(sw)
Vin
IC2851
MAIN 12V
12V
5V
IC2854
5V
IC2857
1.8V
IC2856
2.5V
IC2855
3.3V
D-2.5V
D-3.3V
TPA18
TPA25
TPA33
TPA15
TPA90
TPA120
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8


TNP2AH061AD
A
NECK-BLK
Q1401
R1409 47k
D1401
R1408 4.7k
R1405 9.1k 1%
*R1406 2.1k 1%
*R1407 680 1%
AA-NECK-BLK
R1410 47k
R1411 10k
C1403 35V 47u
C1402 16V 0.1u
VCC
GND
DEFLECTION
R1403 4.7k
R1401 39k 1%
R1402 30.1k 1%
C1401 50V 0.01u
R1404 8.2k 1%
IC1401
JS1401
JS1402
AA-VL
C2326 50V 0.1u
TP127
TP128
TP119
AUDIO GND
15V-AUDIO
AUDIO GND
15V-AUDIO
-15V-AUDIO
-15V-AUDIO
GND
TP135
TP129
TP139
TP130
TP138
TP131
AA-140V-SW
AA-SOS1
B-DRIVE
AA-H-CENTER
AA-TRAPEZUIDE
GND
140V ON/OFF
GND
SOS1
B DRIVE
GUN CENTER ADJ
+B F/B
TRAPEZUIDE
A6
TP133
TP134
ATSC-10V
UNREG 30V
UNREG 15V
UNREG 15V
DEFLECTION
GUARD-H
TP142
AA-INNER-PIN
AA-VL
AA-V-RASTER
AA-V-DRIVE
GND
INNER PIN
GND
VL
GND
V CENTER
V DRIVE
12V
V GND
12V
12V
A7
IC1503
C1523 35V 47u
R1534 2.2k 1%
*R1536 19.6k 1%
C1557 50V 1000p
VCC
GND
R1526 10k
R1527 4.7k
R1523 2.2k
R1522 33
Q1501
Q1502
AA-H-DRIVE
AA-FBP
D1560
AA-HHS-DET
AA-ABL
AA-HD-SD-SW
AA-VDAF
AA-HDAF
H DRIVE2
BTL-30V
GND
FBP
GND
GND
GND
EHT PROTECT
GND
ABL
GND
480P 1080I
GND
V DAF
GND
H DAF
A8
R2854 10k
IC2851
Vc
Vin
GND
Vo
R2851 1.3 2W
C2851 25V 470u
TPA120
12V
C2852 16V 220u
MAIN 12V
D1554
R1507 4.7k 1%
R1508 10k
R1514 1k
C1506 50V 0.022u
C1526 50V 0.01u
C1501 35V 47u
IC1501
R1591 2.2k
R1593 10k
R1592 1.5k
R1584 0
D1503
R1529 4.7k
R1530 10k
C1528 50V 0.01u
C1570 35V 47u
IC1502
R1537 10k
C1504
R1515 100k
C1505 50V 0.01u
R1531 10k
R1532 0
B DAC
C1507 50V 0.022u
R1518 10k
+B FEEDBACK
R1516 0
D1555
IC2855
3.3V
ON/OFF
Vadj
GND
Vout(sw)
Vin
TPA33
L2861 JW
R2856 1.65k
R2857 1.02k 1%
L2860 47u
C2867 10V 470u
D2856
L2859 JW
C2865 25V 220u
69 V 1u
C1522 35V 100u
Q1511
JS1501 0
Q1512
C1558 50V 68p
R1569 4.7k
R1588 1.5k
Q1505
Q1504
R1599 4.7k
C1559 50V 1000p
R1585 3.65k 1%
R1583 5.76k 1%
D1550
C1535 50V 10u
R1587 22k 1%
C1502 50V 0.01u
R1512 10k 1%
EW
AA-EW
AA-H-DRIVE
AA-H-DRIVE-OUT
DEFLECTION
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8

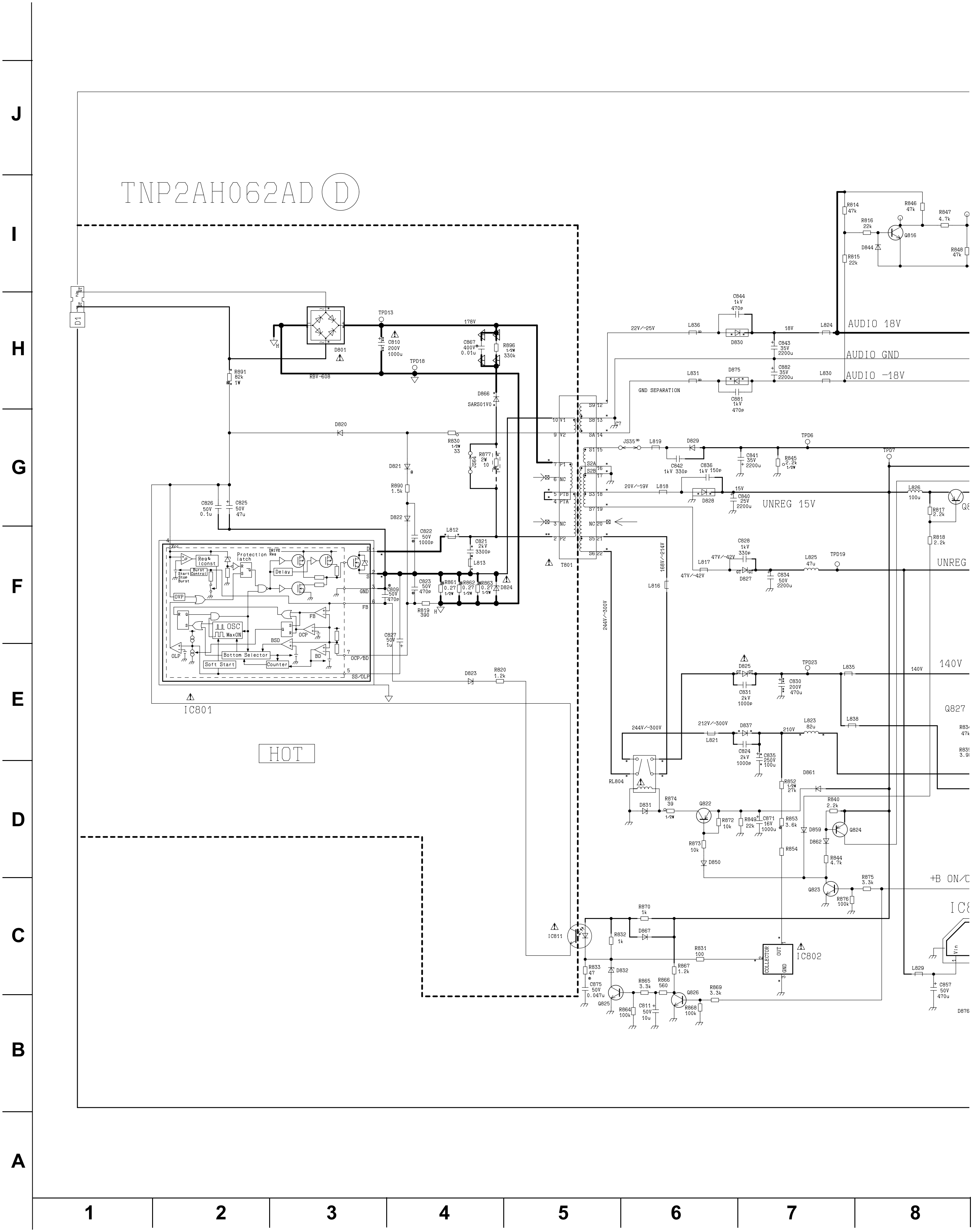

A-BOARD
TNR001
FRONT VIDEO
BACK VIDEO
IC2201
MTS
DG-BOARD
IC2451
AUDIO PROCESSING
VAO
IC2301
AMP
SPK

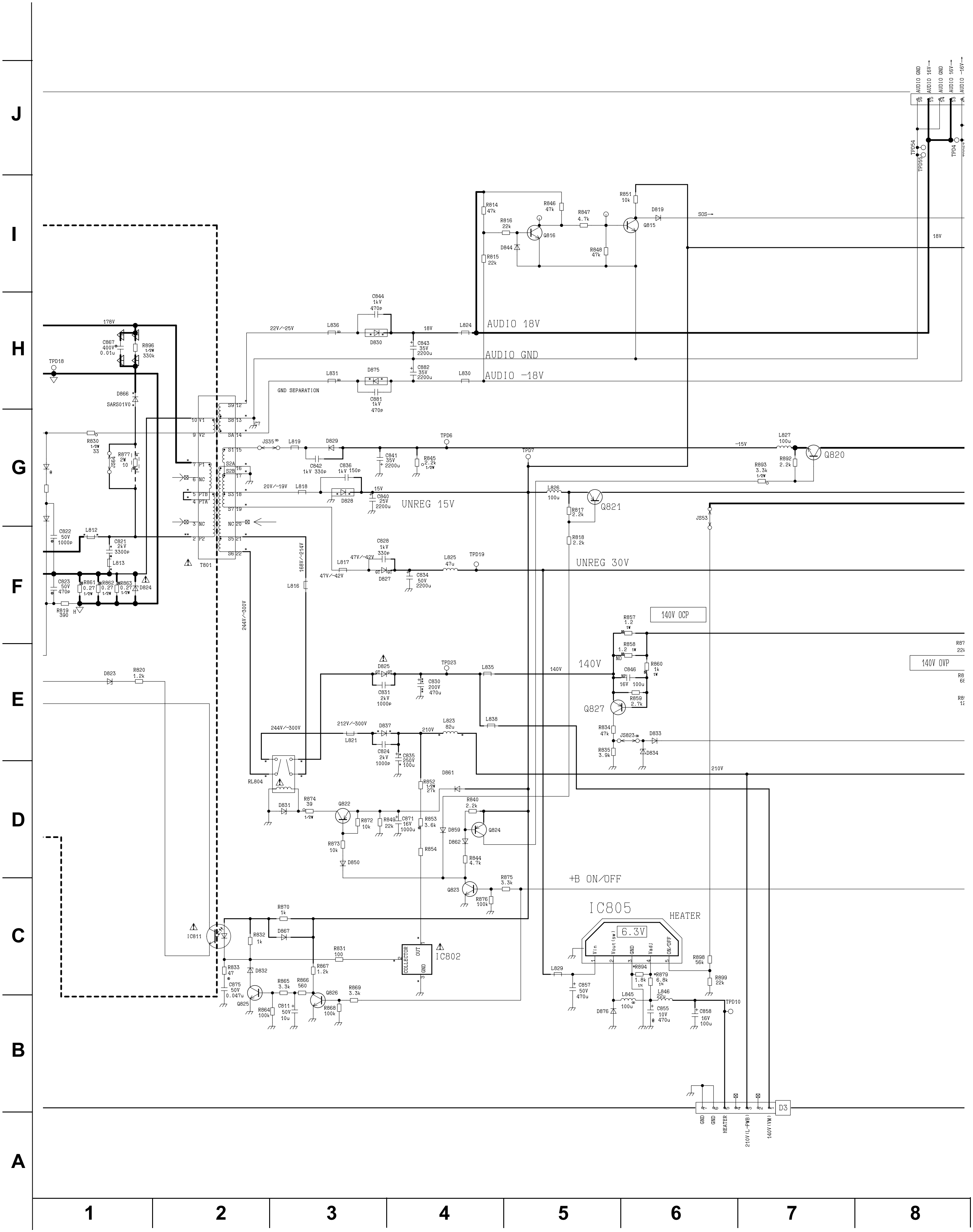
**AUDIO BLOCK DIAGRAM CT-32HL44J/UJ**


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
H.V.DANGER
COLD
HOT
PbF
TNP2AH062
SEE REVERSE FOR ORDER NO.
1
D
IC805
IC801
IC811
IC802
IC500
IC503
IC504
IC507
Q824
Q823
Q822
Q820
Q821
Q831
Q825
Q703
Q704
Q702
Q701
Q560
Q459
Q551
Q827
D20
D6
D7
D9
D3
D1
T801
T501
T553
RL804
J504
L552
L552A
L554
L506
L514
DY
TPD53
TPD24
TPD28
TPD25
TPD27
TPD32
TPD11
TPD12
TPD19
TPD6
TPD10
TPD17
TPD7
TPD55
TPD54
TPD34
TPD35
TPD42
TPD48
TPD41
TPD18
TPD13
TPD23
TPD9
V1
V2
P1
S2A
S2B
PTB
PTA
P2
S9
S8
SA
S1
S3
S7
S5
S6
10
22
8
2
R503
R507
R528
R529
R530
R531
R718
D516
D528
D523
D503
C810
C830
C872
C873
C874
D801
R891

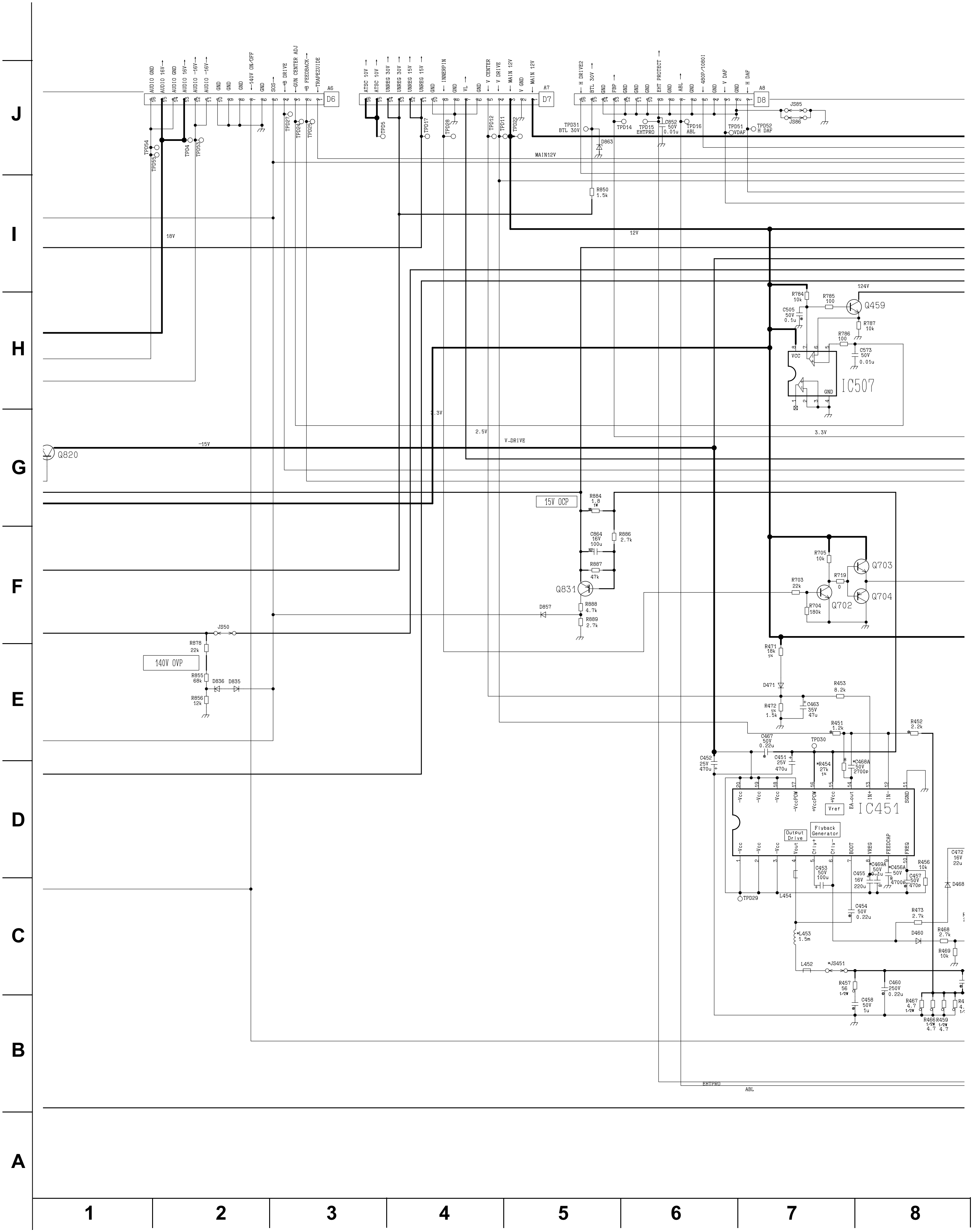

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
D7
D8
Q459
IC507
Q560
TPD35
IC500
IC502
IC45
IC501
Q404
Q406
Q405
Q512
Q513
Q517
Q516
Q519
Q518
Q701
Q556
Q551
Q827
Q501
Q511
H. V. DANGER
H. V. DANGER
T553
T551
T550
T501
L554
L552
L552A
L553
L509
L522
L823
L508
L505
L502
L501
DY
R503
R510
R597
R502
TPD12
TPD14
TPD29
TPD30
TPD31
TPD32
TPD33
TPD36
TPD38
TPD39
TPD40
TPD41
TPD42
TPD44
TPD46
TPD48
TPD49
TPD50
TPD52
TPD2
TPD1
TPD15
TPD16
TPD22
D14
D15
D16
D528
D523
VR538
VR524
COLD

D-BOARD 2/2 TNP2AH062 CT-32HL44J/UJ


TNP2AH062AD
D
HOT
IC801
IC811
IC802
T801
RL804
D801
RBV-608
AUDIO 18V
AUDIO GND
AUDIO -18V
UNREG 15V
UNREG
140V
Q827
+B ON/C
GND SEPARATION
22V/~25V
20V/~19V
47V/~42V
168V/~214V
244V/~300V
212V/~300V
210V
178V
18V
15V
140V
Protection latch
Reg& Iconst
Burst Control
Delay
OVP
OLP
OSC
MaxON
OCP
BSD
FB
BD
Bottom Selector
Soft Start
Counter
OCP/BD
SS/OLP
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8



J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
AUDIO GND
AUDIO 16V
AUDIO GND
AUDIO 16V
AUDIO -16V
TPD54
TPD55
TPD4
R814 47k
R846 47k
R851 10k
R816 22k
R847 4.7k
D819
SOS
Q816
Q815
D844
R848 47k
R815 22k
18V
176V
C867 400V 0.01u
R896 1/2W 330k
TPD18
D866
SAR501V0
C844 1kV 470p
L836
22V/-25V
D830
18V
L824
AUDIO 18V
C843 35V 2200u
AUDIO GND
L831
D875
C882 35V 2200u
L830
AUDIO -18V
C881 1kV 470p
GND SEPARATION
R830 1/2W 33
JS35
L819
D829
TPD6
-15V
L827 100u
Q820
R877 2W 10
JS64
C841 35V 2200u
R845 2.2k 1/2W
TPD7
C842 1kV 330p
C836 1kV 150p
R893 3.3k 1/2W
R892 2.2k
20V/-19V
L818
15V
D828
C840 25V 2200u
UNREG 15V
L826 100u
Q821
R817 2.2k
R818 2.2k
JS53
C822 50V 1000p
L812
C821 2kV 3300p
L813
T801
C828 1kV 330p
47V/-42V
L817
D827
L825 47u
TPD19
UNREG 30V
C834 50V 2200u
168V/-214V
C823 50V 470p
R861 0.27 1/2W
R862 0.27 1/2W
R863 0.27 1/2W
D824
R819 390
L816
244V/-300V
R857 1.2 1W
140V OCP
R858 1.2 1W
R860 1k 1W
140V OVP
D823
R820 1.2k
D825
TPD23
L835
140V
C846 16V 100u
C830 200V 470u
C831 2kV 1000p
R859 2.7k
Q827
244V/-300V
212V/-300V
D837
210V
L823 82u
L838
R834 47k
JS823
D833
L821
C824 2kV 1000p
C835 250V 100u
R835 3.9k
D834
RL804
R852 1/2W 27k
D861
210V
D831
R874 39 1/2W
Q822
R840 2.2k
R872 10k
R849 22k
C871 16V 1000u
R853 3.6k
D859
Q824
D862
R873 10k
R854
R844 4.7k
D850
R875 3.3k
+B ON/OFF
Q823
R876 100k
IC805
HEATER
6.3V
Vin
Vout(sw)
GND
Vadj
ON/OFF
R870 1k
IC811
R832 1k
D867
R831 100
COLLECTOR
OUT
GND
IC802
R898 56k
R833 47
D832
R867 1.2k
L829
R894
R879 6.8k
R899 22k
C875 50V 0.047u
R865 3.3k
R866 560
R869 3.3k
C857 50V 470u
L845 100u
L846 22u
TPD10
Q825
Q826
R864 100k
C811 50V 10u
R868 100k
D876
C855 10V 470u
C858 16V 100u
D3
GND
GND
HEATER
210V(L-PWB)
140V(VM)


J
I
H
G
F
E
D
C
B
A
1
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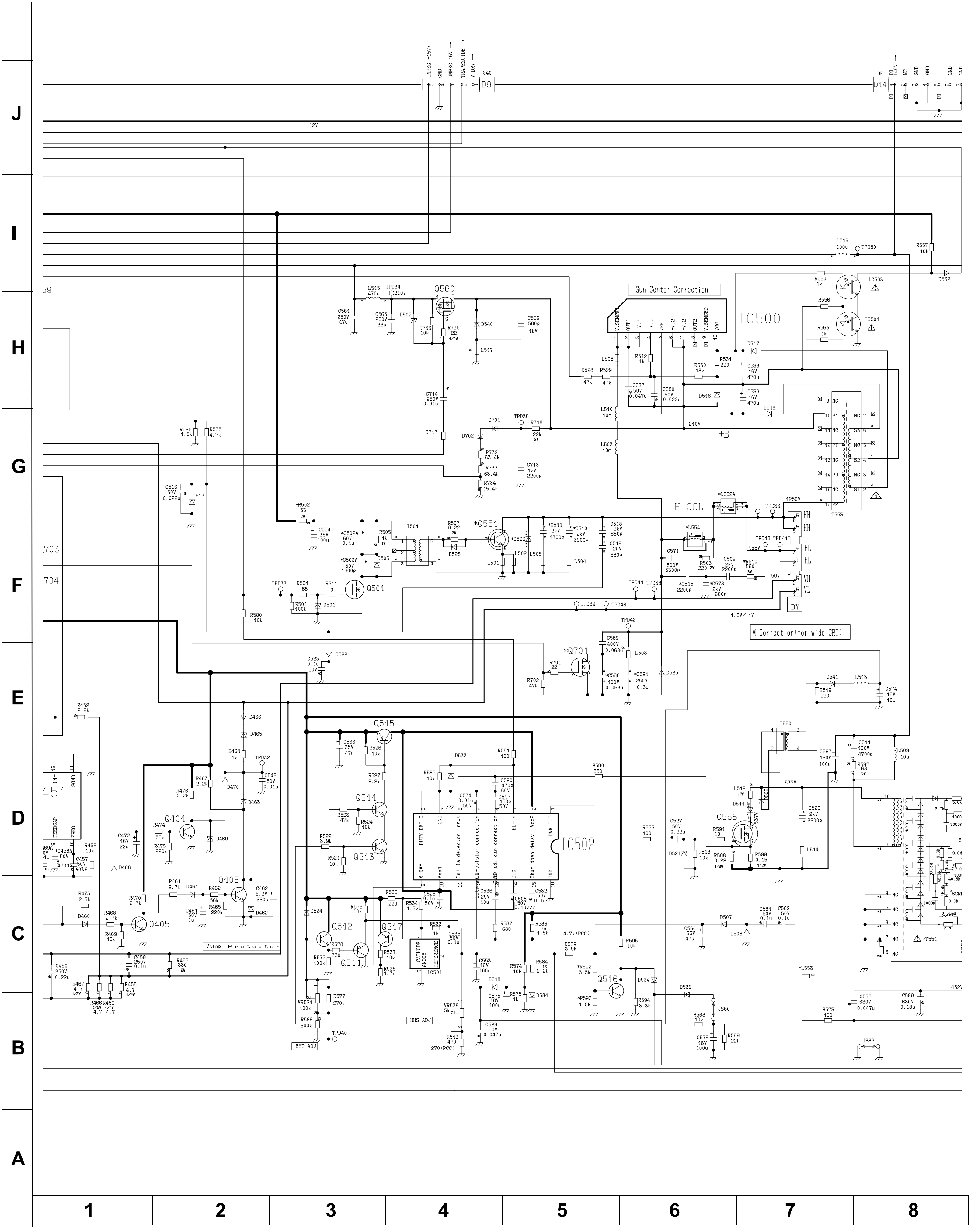
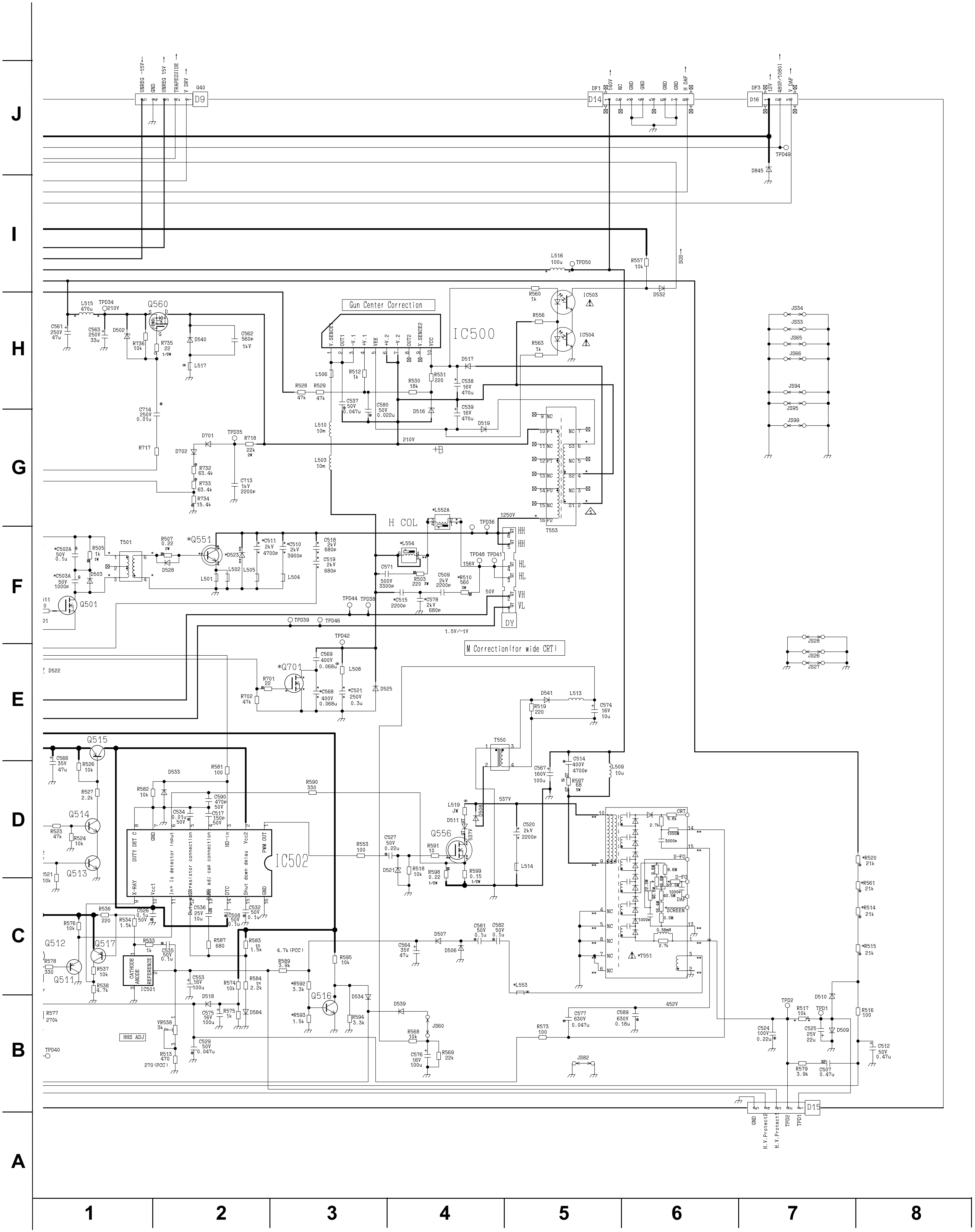
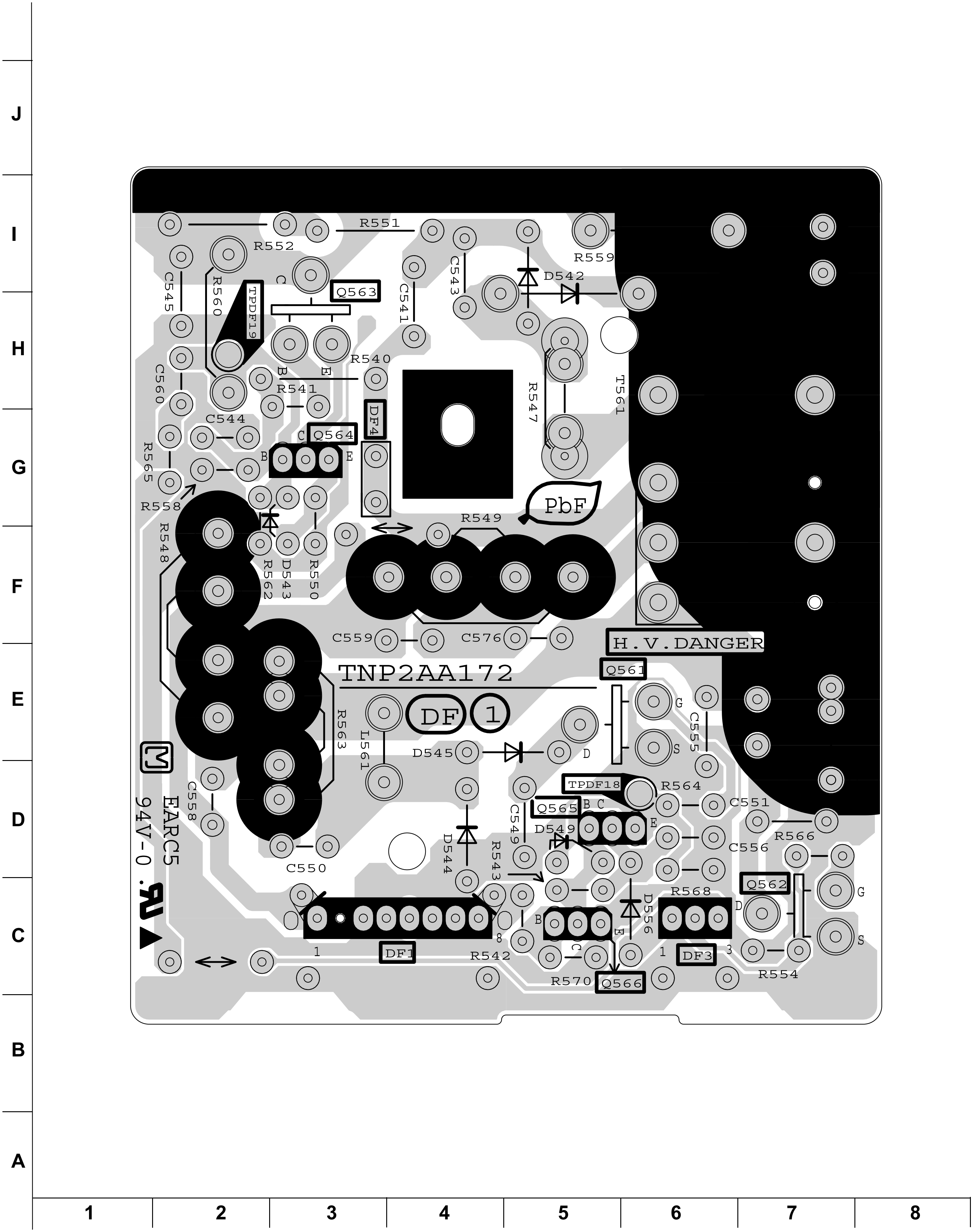
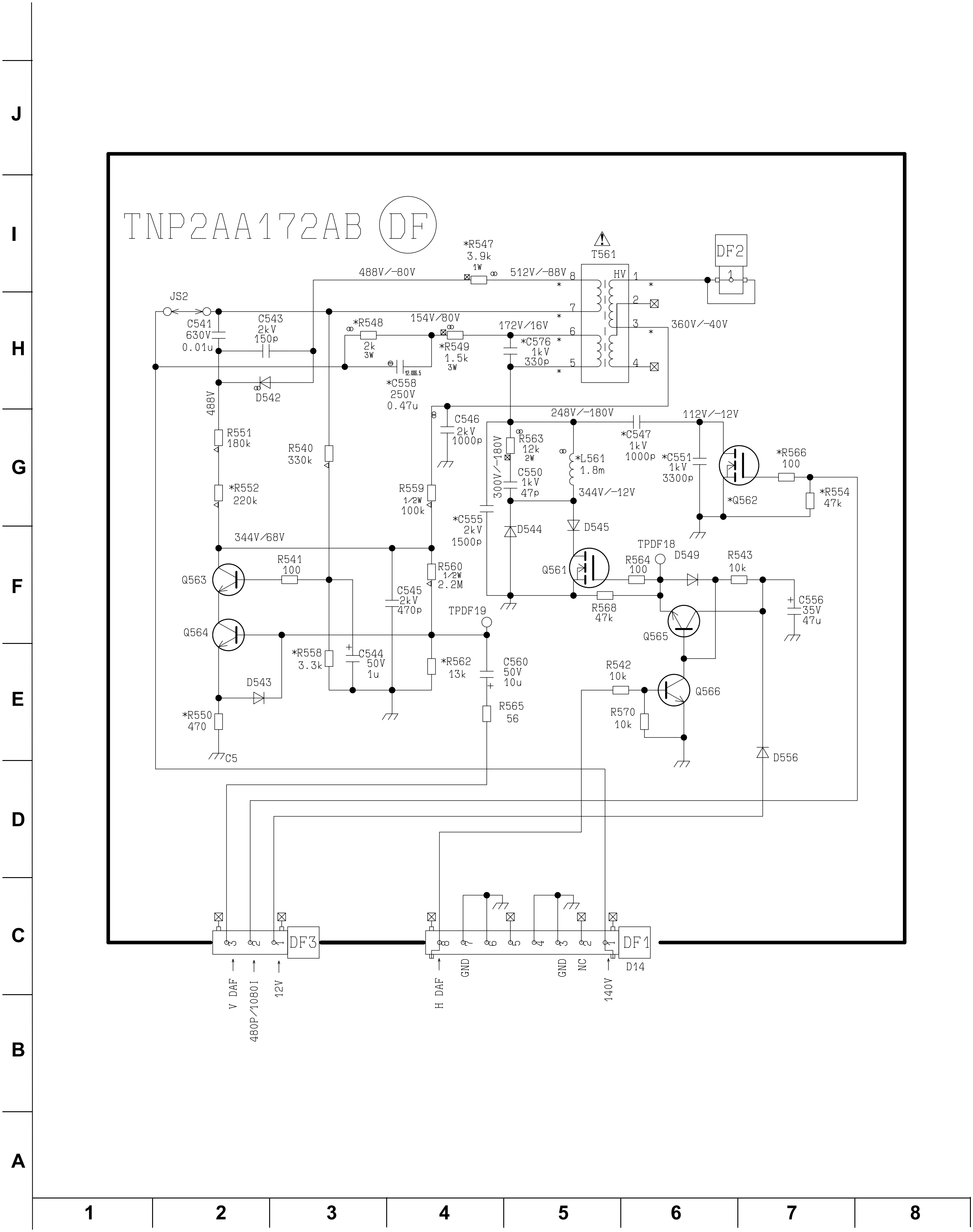
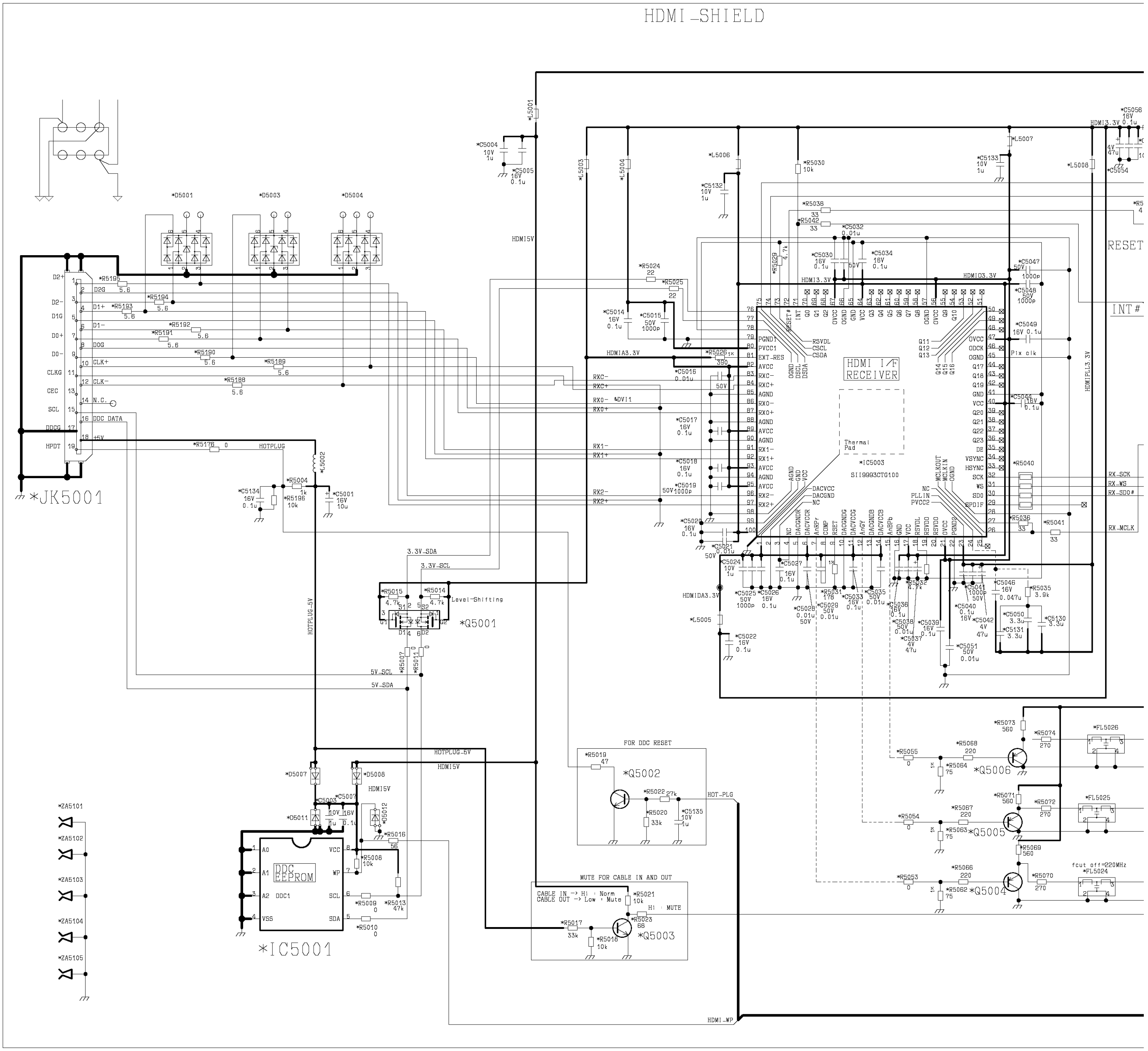
4
5
6
7
8
A6
D6
AUDIO GND
AUDIO 16V
AUDIO GND
AUDIO 16V
AUDIO -16V
AUDIO -16V
GND
GND
GND
140V ON/OFF
GND
SOS
B DRIVE
GUN CENTER ADJ
B FEEDBACK
TRAPEZOIDE
A7
D7
ATSC 10V
ATSC 10V
UNREG 30V
UNREG 30V
UNREG 15V
UNREG 15V
GND
INNERPIN
GND
VL
GND
V CENTER
V DRIVE
MAIN 12V
V GND
MAIN 12V
A8
D8
H DRIVE2
BTL 30V
GND
FBP
GND
GND
GND
EHT PROTECT
GND
ABL
GND
480P/1080I
GND
V DAF
GND
H DAF
JS85
JS86
TPD54
TPD55
TPD4
TPD53
TPD27
TPD24
TPD25
TPD5
TPD17
TPD28
TPD12
TPD11
TPD22
TPD31
BTL 30V
D863
TPD14
TPD15
EHTPRO
C852
50V
0.01u
TPD16
ABL
TPD51
VDAF
TPD52
H DAF
MAIN12V
R850
1.5k
18V
12V
R784
10k
R785
100
124V
Q459
C505
50V
0.1u
R787
10k
R786
100
C573
50V
0.01u
VCC
GND
IC507
3.3V
2.5V
V-DRIVE
3.3V
-15V
Q820
15V OCP
R884
1.8
1W
C864
16V
100u
NP
R886
2.7k
R887
47k
Q831
D857
R888
4.7k
R889
2.7k
R705
10k
Q703
R703
22k
R719
0
Q704
Q702
R704
180k
JS50
R878
22k
140V OVP
R855
68k
D836
D835
R856
12k
R471
18k
1%
D471
R453
8.2k
R472
1%
1.5k
C463
35V
47u
R451
1.2k
R452
2.2k
C467
50V
0.22u
TPD30
C452
25V
470u
C451
25V
470u
*R454
27k
1%
*C468A
50V
2700p
-Vcc
-Vcc
-Vcc
-VccPOW
+VccPOW
+Vcc
EA-out
IN+
IN-
SGND
Vref
IC451
Flyback Generator
Output Drive
-Vcc
-Vcc
-Vcc
Vout
Cf1v+
Cf1v-
BOOT
VREG
FEEDCAP
FREQ
C453
50V
100u
C455
16V
220u
*C469A
50V
0.1u
*C456A
50V
4700p
R456
10k
C457
50V
470p
C472
16V
22u
D468
TPD29
L454
C454
50V
0.22u
R473
2.7k
*L453
1.5m
R468
2.7k
D460
R469
10k
L452
*JS451
R457
56
1/2W
C460
250V
0.22u
C458
50V
1u
R467
4.7
1/2W
R466
1/2W
4.7
R459
1/2W
4.7
EHTPRO
ABL


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
UNREG -15V
GND
UNREG 15V
TRAPEZUIDE
V DRV
G40
D9
DF1
140V
NC
GND
D14
12V
L516
100u
TPD50
R557
10k
D532
R560
1k
IC503
R556
R563
1k
IC504
Gun Center Correction
IC500
V.SENCE1
OUT1
-V.1
+V.1
VEE
+V.2
-V.2
OUT2
V.SENCE2
VCC
L515
470u
TPD34
210V
Q560
C561
250V
47u
C563
250V
33u
D502
R736
10k
R735
22
1/2W
D540
C562
560p
1kV
L517
C714
250V
0.01u
R717
D701
D702
TPD35
R718
22k
2W
R732
63.4k
R733
63.4k
R734
15.4k
C713
1kV
2200p
L506
R512
1k
R528
47k
R529
47k
C537
50V
0.047u
C580
50V
0.022u
R530
18k
R531
220
C538
16V
470u
D517
D516
C539
16V
470u
D519
L510
10m
L503
10m
210V
+B
T553
1250V
H COL
*L552A
TPD36
HH
HL
VH
VL
DY
R525
1.8k
R535
4.7k
C516
50V
0.022u
D513
*R502
33
2W
C554
35V
100u
*C502A
50V
0.1u
R505
1k
1W
T501
R507
0.22
2W
*Q551
*D523
*C511
2kV
4700p
*C510
2kV
3900p
C518
2kV
680p
C519
2kV
680p
D528
L501
L502
L505
L504
*C503A
50V
1000p
D503
*L554
C571
500V
3300p
R503
220 3W
C509
2kV
2200p
*R510
560
3W
TPD48
TPD41
156V
50V
*C515
2200p
*C578
2kV
680p
TPD44
TPD38
TPD33
R504
68
R511
0
Q501
R501
100k
D501
R580
10k
TPD39
TPD46
1.5V/-1V
M Correction(for wide CRT)
TPD42
C569
400V
0.068u
L508
*Q701
R701
22
R702
47k
*C568
400V
0.068u
*C521
250V
0.3u
D525
C523
0.1u
50V
D522
D541
L513
C574
16V
10u
R519
220
T550
C514
400V
4700p
L509
10u
C567
160V
100u
R597
68
5W
537V
R452
2.2k
D466
D465
R464
1k
TPD32
C548
50V
0.01u
Q515
C566
35V
47u
R526
10k
R581
100
D533
R590
330
R582
10k
C590
470p
50V
C534
0.01u
50V
C517
150p
50V
451
IN-
SGND
FEEDCAP
FREQ
R463
2.2k
R476
2.2k
D470
D463
R527
2.2k
Q514
R523
47k
R524
10k
DUTY DET C
GND
In+ Is detector input
Duty resistor connection
HHS adj cap connection
HD-in
Vcc2
PWM OUT
IC502
X-RAY
Vcc1
DTC
Shut down delay
L519
JW
D511
D508
C520
2kV
2200p
Q404
R474
56k
R475
220k
D469
C472
16V
22u
R522
3.9k
Q513
R521
10k
R553
100
C527
50V
0.22u
R591
10
Q556
L514
D521
R518
10k
R598
0.22
1/2W
R599
0.15
1/2W
*C456A
50V
4700p
C457
50V
470p
R456
10k
D468
R461
2.7k
D461
Q406
C462
6.3V
220u
R462
56k
R465
220k
D462
C461
50V
1u
R470
2.7k
R473
2.7k
D460
R468
2.7k
R469
10k
Q405
Vstop Protector
C526
0.1u
50V
C536
25V
10u
*C508
50V
0.1u
C532
50V
0.1u
R536
220
R534
1.5k
R576
10k
D524
Q512
Q517
R578
330
Q511
R537
10k
R538
4.7k
R572
100k
R533
1k
C535
50V
0.1u
CATHODE
ANODE
REFERENCE
IC501
R587
680
R583
1.5k
R589
3.9k
4.7k(PCC)
R595
10k
C564
35V
47u
D507
D506
C581
50V
0.1u
C582
50V
0.1u
NC
*T551
*L553
C460
250V
0.22u
C459
250V
0.1u
R455
330
2W
R467
4.7
1/2W
R466
4.7
1/2W
R459
4.7
1/2W
R458
4.7
1/2W
C553
16V
100u
R574
10k
R584
2.2k
*R592
3.3k
*R593
1.5k
Q516
D534
R594
3.3k
D539
JS60
452V
C577
630V
0.047u
C589
630V
0.18u
R573
100
R577
270k
VR524
100k
R586
200k
TPD40
EHT ADJ
D518
C575
16V
100u
R575
1k
D584
VR538
3k
HHS ADJ
R513
470
270(PCC)
C529
50V
0.047u
R568
10k
C576
16V
100u
R569
22k
JS82

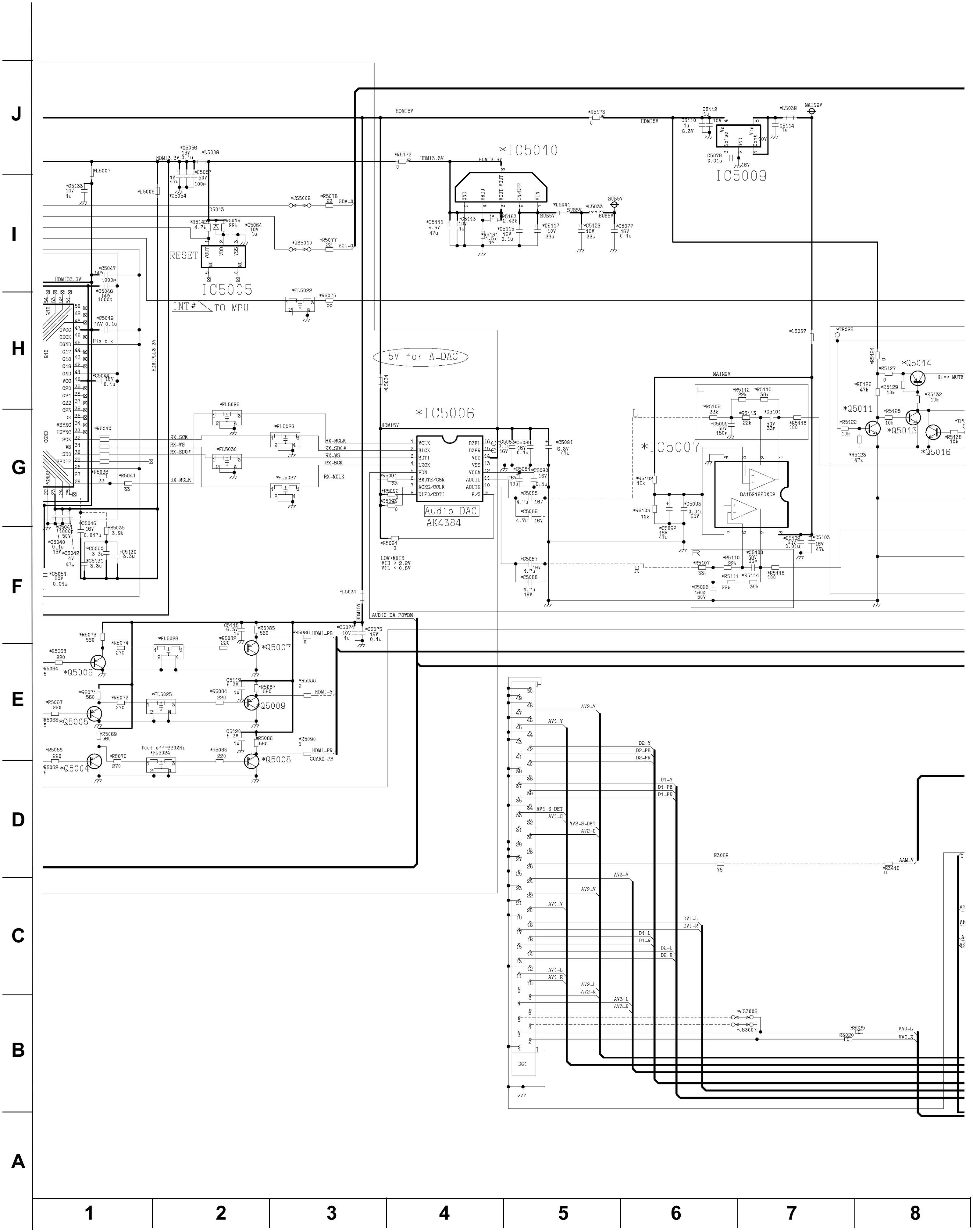

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
UNREG -15V
GND
UNREG 15V
TRAPEZOIDE
V DRV
G40
D9
DF1
D14
140V
NC
GND
H DAF
DF3
D16
12V
480P/1080I
V DAF
TPD49
D845
L516
100u
TPD50
R557
10k
SOS
D532
Q560
L515
470u
TPD34
210V
C561
250V
47u
C563
250V
33u
D502
R736
10k
R735
22
1/2W
D540
C562
560p
1kV
L517
C714
250V
0.01u
R717
Gun Center Correction
IC500
V.SENCE1
OUT1
-V.1
+V.1
VEE
+V.2
-V.2
OUT2
V.SENCE2
VCC
R560
1k
R556
R563
1k
IC503
IC504
D517
L506
R512
1k
R531
220
C538
16V
470u
R528
47k
R529
47k
R530
18k
C537
50V
0.047u
C580
50V
0.022u
D516
C539
16V
470u
D519
L510
10m
L503
10m
210V
+B
D701
TPD35
R718
22k
2W
D702
R732
63.4k
R733
63.4k
R734
15.4k
C713
1kV
2200p
T553
NC
P1
S3
S2
P0
S1
P2
1250V
H COL
*L552A
TPD36
*C502A
50V
0.1u
*C503A
50V
1000p
R505
1k
1W
D503
T501
R507
0.22
2W
D528
*Q551
*D523
*C511
2kV
4700p
*C510
2kV
3900p
C518
2kV
680p
C519
2kV
680p
L501
L502
L505
L504
*L554
C571
500V
3300p
R503
220
3W
C509
2kV
2200p
*R510
560
3W
TPD48
TPD41
156V
50V
HH
HL
VH
VL
DY
Q501
TPD44
TPD38
*C515
2200p
*C578
2kV
680p
TPD39
TPD46
1.5V/-1V
M Correction(for wide CRT)
TPD42
C569
400V
0.068u
L508
*Q701
R701
22
R702
47k
*C568
400V
0.068u
*C521
250V
0.3u
D525
D522
D541
L513
R519
220
C574
16V
10u
T550
C567
160V
100u
C514
400V
4700p
R597
68
5W
L509
10u
Q515
C566
35V
47u
R526
10k
R527
2.2k
Q514
R523
47k
R524
10k
Q513
R521
10k
D533
R581
100
R582
10k
C534
0.01u
50V
C590
470p
50V
C517
150p
50V
R590
330
IC502
DUTY DET C
GND
In+ Is detector input
Nresistor connection
adj cap connection
HD-in
Vcc2
PWM OUT
X-RAY
Vcc1
Duty
DTC
Shut down delay
C536
25V
10u
C508
50V
0.1u
C532
50V
0.1u
R536
220
R576
10k
C526
0.1u
50V
R534
1.5k
Q512
Q517
R533
1k
C535
50V
0.1u
R578
330
Q511
R537
10k
R538
4.7k
CATHODE
ANODE
REFERENCE
IC501
R587
680
R583
1%
1.5k
4.7k(PCC)
R589
3.9k
R595
10k
C553
16V
100u
R574
10k
R584
1%
2.2k
*R592
3.3k
*R593
1.5k
Q516
D534
R594
3.3k
D518
C575
16V
100u
R575
1k
D584
R577
270k
VR538
3k
HHS ADJ
C529
50V
0.047u
R513
470
270(PCC)
TPD40
L519
JW
D508
D511
537V
Q556
R553
100
C527
50V
0.22u
R591
10
D521
R518
10k
R598
0.22
1/2W
R599
0.15
1/2W
C520
2kV
2200p
L514
D507
C581
50V
0.1u
C582
50V
0.1u
C564
35V
47u
D506
*L553
D539
JS60
R568
10k
C576
16V
100u
R569
22k
R573
100
C577
630V
0.047u
C589
630V
0.18u
452V
JS82
*T551
CRT
S-FO
D-FO
DAF
SCREEN
5.6k
2.7k
1000M
3000p
9.6M
22.0M
40.5M
1000p
0.0M
0.56mH
TPD2
R517
10k
TPD1
D510
D509
C524
100V
0.22u
C525
25V
22u
R516
100
C512
50V
0.47u
R579
3.9k
C507
0.47u
NP
D15
GND
H.V.Protect2
H.V.Protect1
TPD2
TPD1
*R520
21k
*R561
21k
*R514
21k
*R515
21k
JS34
JS33
JS65
JS66
JS94
JS95
JS99
JS28
JS26
JS27

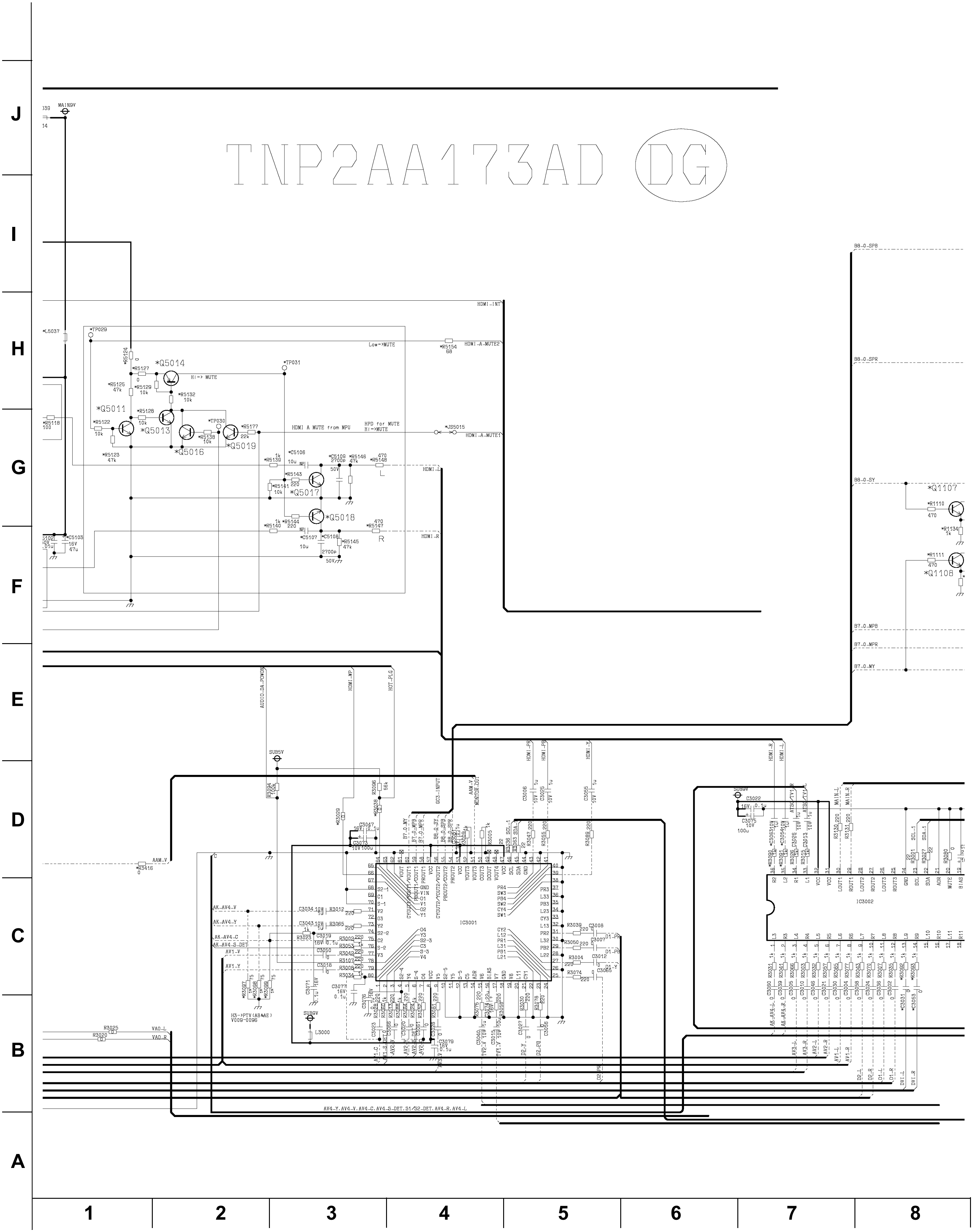

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
R551
R552
R559
C545
R560
TPDF19
C
Q563
C541
C543
D542
B
E
R540
R541
T561
R547
C560
C544
C
Q564
B
E
DF4
R565
R558
PbF
R549
R548
R562
D543
R550
C559
C576
H.V.DANGER
TNP2AA172
Q561
G
S
D
C555
R563
L561
DF
1
D545
TPDF18
R564
C551
Q565
B C
E
C558
C549
D549
R566
EARC5
94V-0
C550
D544
R543
C556
Q562
D556
R568
D
G
S
B
8
1
DF1
R542
C
E
1
DF3
3
R554
R570
Q566


J
I
H
G
F
E
D
C
B
A
TNP2AA172AB
DF
*R547
3.9k
1W
488V/-80V
512V/-88V
T561
DF2
1
HV
8
7
6
5
1
2
3
4
360V/-40V
JS2
C541
630V
0.01u
C543
2kV
150p
*R548
2k
3W
154V/80V
*R549
1.5k
3W
172V/16V
*C576
1kV
330p
*C558
250V
0.47u
12.0X6.5
D542
488V
C546
2kV
1000p
248V/-180V
*C547
1kV
1000p
112V/-12V
R551
180k
R540
330k
R563
12k
2W
*L561
1.8m
*C551
1kV
3300p
*Q562
*R566
100
*R554
47k
C550
1kV
47p
300V/-180V
344V/-12V
*R552
220k
R559
1/2W
100k
*C555
2kV
1500p
D544
D545
344V/68V
TPDF18
D549
R543
10k
Q563
R541
100
R560
1/2W
2.2M
Q561
R564
100
C545
2kV
470p
R568
47k
C556
35V
47u
Q564
TPDF19
Q565
*R558
3.3k
C544
50V
1u
*R562
13k
C560
50V
10u
R542
10k
Q566
D543
R565
56
R570
10k
*R550
470
C5
D556
DF3
3
2
1
DF1
8
7
6
5
4
3
2
1
D14
V DAF
480P/1080I
12V
H DAF
GND
GND
NC
140V
1
2
3
4
5
6
7
8


HDMI-SHIELD
*JK5001
D2+
D2-
D1G
D1+
D0+
D0-
CLKG
CEC
SCL
DDCG
HPDT
*D5001
*D5003
*D5004
HOTPLUG
HDMI5V
3.3V-SDA
3.3V-SCL
Level-Shifting
*Q5001
5V-SCL
5V-SDA
HOTPLUG-5V
*IC5001
DDC EEPROM
DDC1
A0
A1
A2
VSS
VCC
WP
SCL
SDA
FOR DDC RESET
*Q5002
HOT-PLG
MUTE FOR CABLE IN AND OUT
CABLE IN -> Hi : Norm
CABLE OUT -> Low : Mute
Hi : MUTE
*Q5003
HDMI-WP
*ZA5101
*ZA5102
*ZA5103
*ZA5104
*ZA5105
HDMI I/F RECEIVER
*IC5003
SII9993CTG100
Thermal Pad
HDMIA3.3V
HDMID3.3V
HDMIO3.3V
HDMI3.3V
HDMIPLL3.3V
RESET
INT#
Pix clk
RX-SCK
RX-WS
RX-SD0#
RX-MCLK
*Q5004
*Q5005
*Q5006
*FL5024
*FL5025
*FL5026
fcut off=220MHz

# HDMI


*IC5010
IC5009
*IC5006
Audio DAC
AK4384
*IC5007
BA15218F0XE2
IC5005
RESET
INT#
TO MPU
5V for A-DAC
LOW-MUTE
VIH > 2.2V
VIL < 0.8V
AUDIO-DA-POWDN
HDMI5V
HDMI3.3V
HDMIPLL3.3V
MAIN9V
SUB5V
SDA-0
SCL-0
RX-SCK
RX-WS
RX-SD0#
RX-MCLK
MCLK
BICK
SDTI
LRCK
PDN
SMUTE/CSN
ACKS/CCLK
DIF0/CDTI
DZFL
DZFR
VDD
VSS
VCOM
AOUTL
AOUTR
P/S
*Q5004
*Q5005
*Q5006
*Q5007
*Q5008
Q5009
*Q5011
*Q5013
*Q5014
*Q5016
HI => MUTE
HDMI-PB
HDMI-Y
HDMI-PR
GUARD-PR
fcut off=220MHz
*FL5024
*FL5025
*FL5026
*FL5027
*FL5028
*FL5029
*FL5030
*FL5022
AV1-Y
AV2-Y
D2-Y
D2-PB
D2-PR
D1-Y
D1-PB
D1-PR
AV1-S-DET
AV1-C
AV2-S-DET
AV2-C
AV3-V
AV2-V
AV1-V
DVI-L
DVI-R
D1-L
D1-R
D2-L
D2-R
AV1-L
AV1-R
AV2-L
AV2-R
AV3-L
AV3-R
VA0-L
VA0-R
AAM-V
R3069
75
*R3416
*JS3006
*JS3007
R3025
R3020
DG1
L
R
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8


TNP2AA173AD
DG
MAIN9V
HDMI-INT
Low->MUTE
*R5154
68
HDMI-A-MUTE2
*TP029
*L5037
*R5124
0
*R5127
0
*Q5014
Hi=> MUTE
*TP031
*R5125
47k
*R5129
10k
*R5132
10k
*Q5011
*R5128
10k
*Q5013
*Q5016
*TP030
*R5138
10k
*Q5019
*R5177
22k
HDMI A MUTE from MPU
HPD for MUTE
Hi=>MUTE
*JS5015
HDMI-A-MUTE1
*R5118
100
*R5122
10k
*R5123
47k
*R5139
1k
*C5106
10u
*C5109
2700p
50V
*R5146
47k
*R5148
470
L
HDMI-L
*R5143
220
*R5141
10k
*Q5017
*Q5018
*R5140
1k
*R5144
220
*C5107
10u
*C5108
2700p
50V
*R5145
47k
*R5147
470
R
HDMI-R
*C5103
16V
47u
B8-O-SPB
B8-O-SPR
B8-O-SY
*Q1107
*R1110
470
*R1134
1k
*R1111
470
*Q1108
B7-O-MPB
B7-O-MPR
B7-O-MY
AUDIO-DA-PDWDN
HDMI-WP
HOT-PLG
SUB5V
R3094
R3096
56k
*R3029
R3038
C3047
16V 0.1u
C3073
10V 100u
B7-O-MY
B7-O-MPB
B7-O-MPR
B8-O-SY
B8-O-SPB
B8-O-SPR
GC3-INPUT
AAM-V
MONITOR-OUT
HDMI-PR
HDMI-PB
HDMI-Y
C3006
10V 1u
C3025
10V 1u
C3055
10V 1u
R3005
R3036
R3063
SCL-1
SDA-1
R3047 220
R3055 220
R3088 220
AAM-V
*R3416
0
C
AK-AV4-V
AK-AV4-Y
AK-AV4-C
AK-AV4-S-DET
AV1-Y
AV1-Y
C3034 10V 1u
R3012 220
C3043 10V 1u
R3065 220
R3023 1k
C3019 16V 0.1u
R3002 220
R3053
R3042
R3107
R3006
R3034
C3050
C3016
C3071
0.1u 16V
C3077
16V
0.1u
C3076
IC3001
VOUT
YOUT1
CYOUT1
YOUT2
GND
VIN
PROUT2
VCC
YOUT3
COUT3
VOUT4
SCL
SDA
S2-1
S-1
C1
V1
V2
Y2
S2-2
C2
S-2
V3
Y3
C3
S2-3
S-3
V4
PR4
SW3
PB4
SW2
CY4
SW1
PR3
L33
PB3
CY3
L23
L13
CY2
L12
PR1
L31
PB1
L21
PR2
L32
PB2
L22
CY1
L11
ADR
BIAS
R3039 220
C3008
R3050 220
C3007
R3004 220
C3012
R3074 220
C3065
D1-PR
D1-PB
D1-Y
R3097
R3098
R3108
75
H3->PTV(AB4AE)
V009-0096
SUB9V
L3000
R3025
R3020
VAO-L
VAO-R
C3023
C3056
C3020
C3061
C3028
C3079
16V
0.1u
C3040
C3015
C3027
C3035
R3081 220
R3075 220
R3030 220
R3078 220
AV1-C
AV4-S-DET
AV2-V
AV2-S-DET
AV2-Y
AV2-C
AV3-Y
TV2-V 10V
TV1-V 10V
D2-Y
D2-PB
D2-PR
AV4-Y.AV4-V.AV4-C.AV4-S-DET.S1/S2-DET.AV4-R.AV4-L
SUB9V
C3022
16V 0.1u
C3075
10V
100u
HDMI-R
HDMI-L
ATSC/TV1-R
ATSC/TV1-L
MAIN-L
MAIN-R
R3130 220
R3131 220
SCL-1
SDA-1
R3001
R3027
R3080
IC3002
R2
L2
R1
L1
VCC
LOUT1
ROUT1
LOUT2
ROUT2
LOUT3
ROUT3
GND
SCL
SDA
ADR
MUTE
BIAS
L3
R3
L4
R4
L5
R5
L6
R6
L7
R7
L8
R8
L9
R9
L10
R10
L11
R11
AK-AV4-L
AK-AV4-R
AV3-L
AV3-R
AV2-L
AV2-R
AV1-L
AV1-R
D2-L
D2-R
D1-L
D1-R
DVI-L
DVI-R
*C3031
*C3053
*R3082
*R3093
A
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C
D
E
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H
I
J
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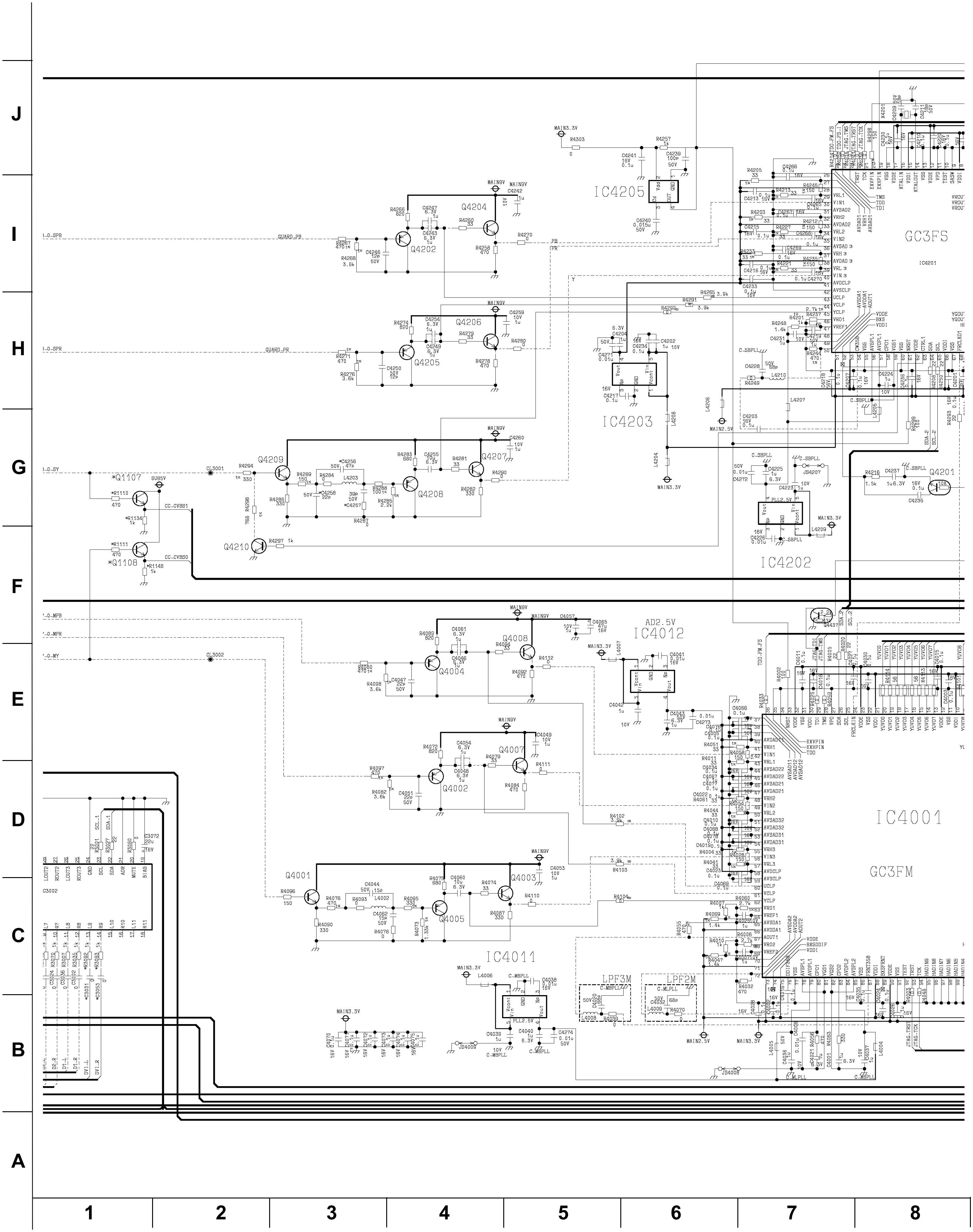
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I
H
G
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C
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A
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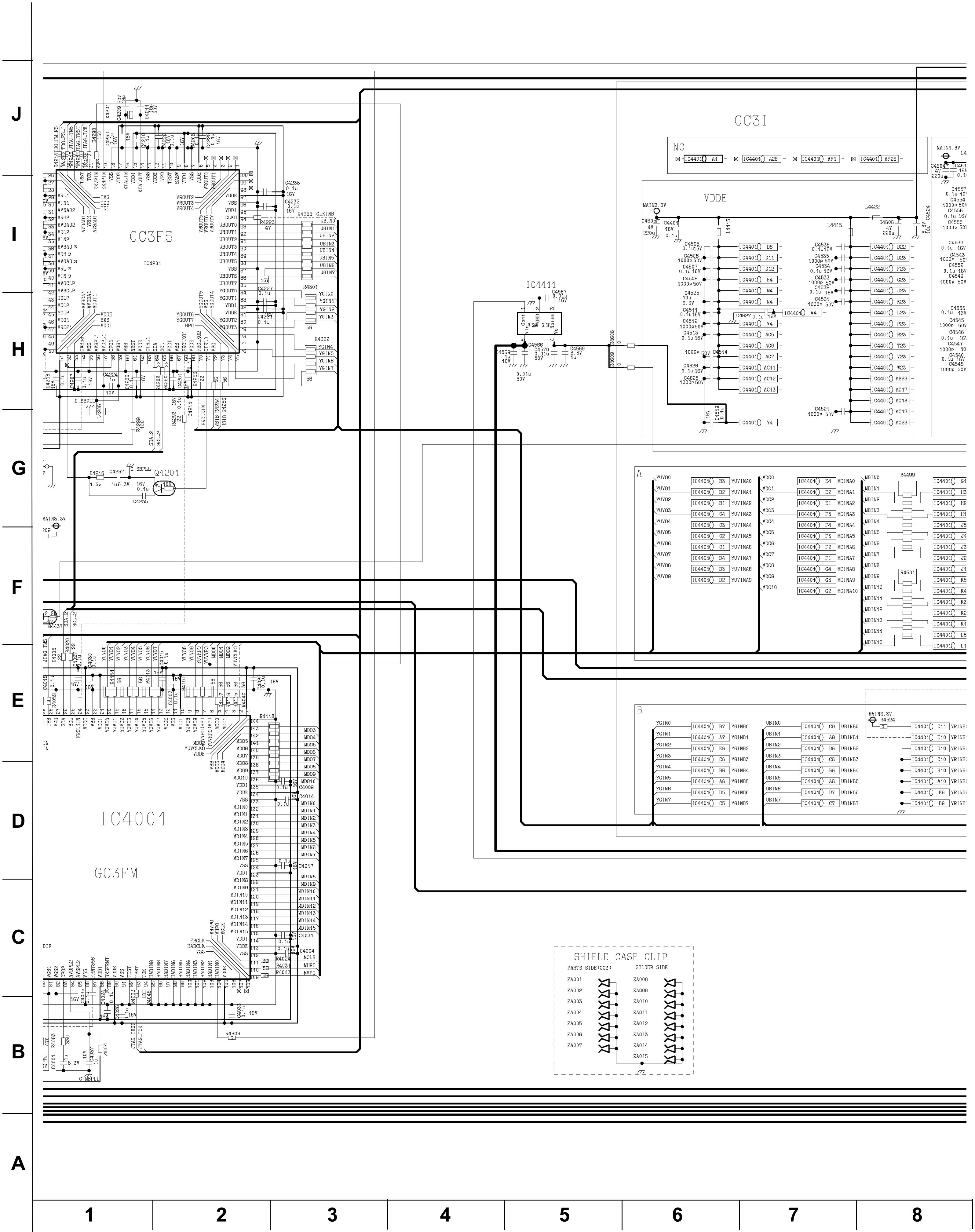
IC4205
IC4203
IC4202
IC4012
AD2.5V
IC4011
IC4001
GC3FS
IC4201
GC3FM
LPF3M
LPF2M
Q4204
Q4202
Q4206
Q4205
Q4209
Q4207
Q4208
Q4210
*Q1107
*Q1108
Q4201
Q4437
Q4008
Q4004
Q4007
Q4002
Q4001
Q4003
Q4005
MAIN9V
MAIN3.3V
MAIN2.5V
SUB5V
CL3001
CL3002
GUARD_PB
GUARD_PR
CC-CVBS1
CC-CVBS0
JS4207
JS4008
JS4009
C_SBPLL
C_MBPLL
PLL2.5V


J
I
H
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F
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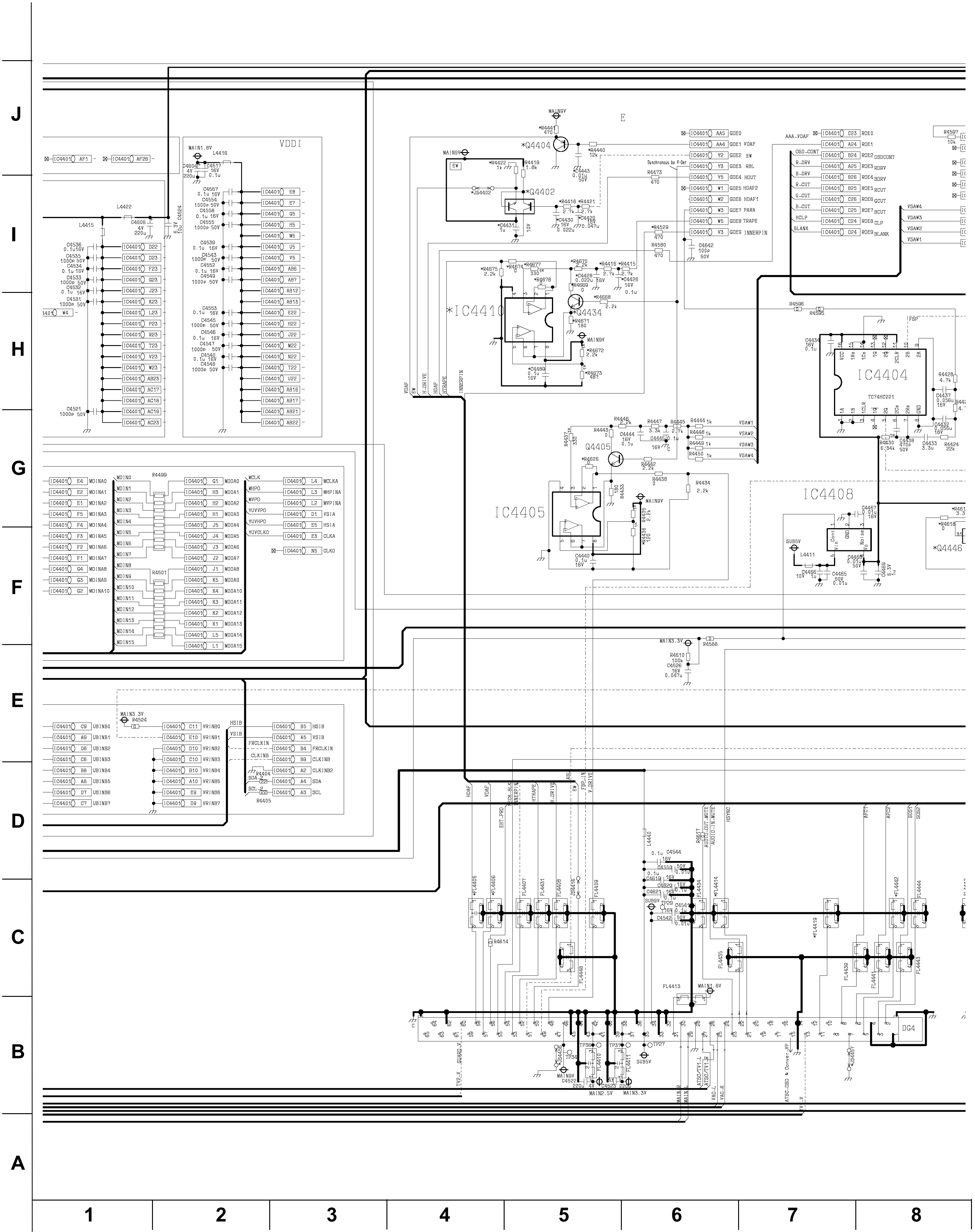
D
C
B
A
1
2
3
4
5
6
7
8
GC3FS
IC4201
X4201
Q4201
C-SBPLL
MAIN3.3V
GC3I
NC
VDDE
MAIN1.8V
IC4411
A
B
IC4001
GC3FM
R4116
R4499
R4501
R4524
SHIELD CASE CLIP
PARTS SIDE(GC3)
SOLDER SIDE
ZA001
ZA002
ZA003
ZA004
ZA005
ZA006
ZA007
ZA008
ZA009
ZA010
ZA011
ZA012
ZA013
ZA014
ZA015



J
I
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D
C
B
A
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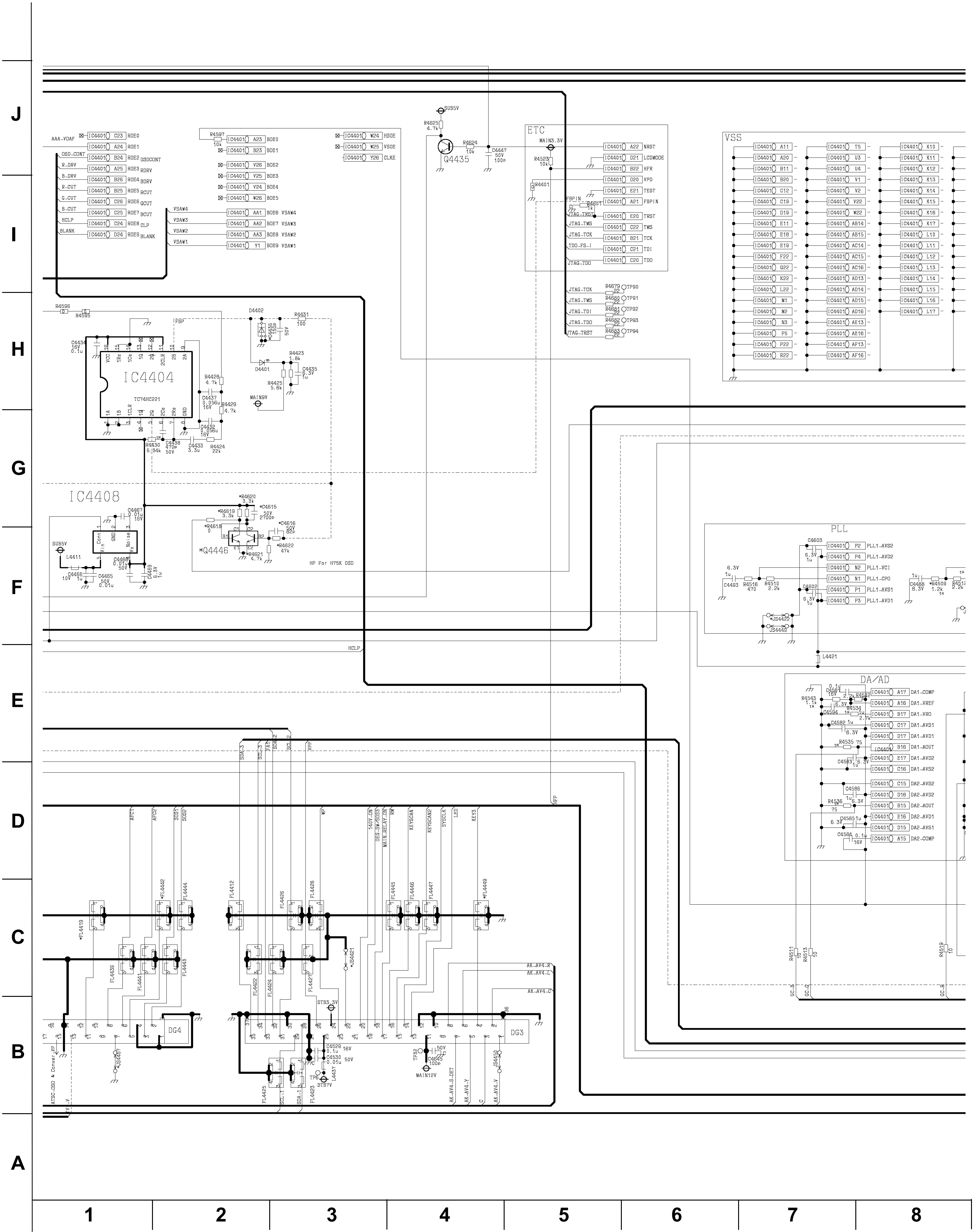
6
7
8
VDDI
MAIN1.8V
L4416
L4422
L4415
IC4401
*Q4404
*Q4402
MAIN9V
EW
*JS4402
*IC4410
*Q4434
Synchronous by V-Def
GOE0
GOE1 VDAF
GOE2 EW
GOE3 RBL
GOE4 HOUT
GOE5 HDAF2
GOE6 HDAF1
GOE7 PARA
GOE8 TRAPE
GOE9 INNERPIN
AAA-VDAF
OSD-CONT
R-DRV
B-DRV
R-CUT
G-CUT
B-CUT
HCLP
BLANK
ROE0
ROE1
ROE2 OSDCONT
ROE3 RDRV
ROE4 BDRV
ROE5 RCUT
ROE6 GCUT
ROE7 BCUT
ROE8 CLP
ROE9 BLANK
VSAW1
VSAW2
VSAW3
VSAW4
IC4404
TC74HC221
Q4405
IC4405
IC4408
SUB5V
L4411
*Q4446
R4499
R4501
MDINA0
MDOA0
MCLK
MCLKA
MHPO
MHPINA
MVPO
MVPINA
YUVVPO
VSIA
YUVHPO
HSIA
YUVCLKO
CLKA
CLKO
MAIN3.3V
R4588
R4610
C4526
R4524
UBINB0
VRINB0
HSIB
VSIB
FRCLKIN
CLKINB
CLKINB2
SDA
SCL
R4404
R4405
HDAF
VDAF
EHT_PRO
BECK_BLK
INNERPIN
HTRAPE
H-DRIVE
ABL
EW
FBP_IN
V_DRIVE
L4440
AUDIO-IN-MUTE
AUDIO-OUT-MUTE
HSYNC
AFC1
AFC2
SOS1
SOS2
FL4405
FL4406
FL4407
FL4431
FL4408
FL4409
FL4434
FL4414
FL4419
FL4442
FL4444
FL4435
FL4439
FL4441
FL4443
FL4448
FL4413
FL4410
FL4411
JS4416
R4614
TP29
TP36
TP37
TP27
TP34
JS4498
JS4497
DG4
MAIN2.5V
TV2_V
GUARD_V
MAIN_R
MAIN_L
ATSC/TV1_L
ATSC/TV1_R
VAO_L
VAO_R
ATSC_OSD & Conver_VP
TV_V

**DG-BOARD** **6/11** **TNP2AA173AD** **CT-32HL44J/UJ**


J
I
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G
F
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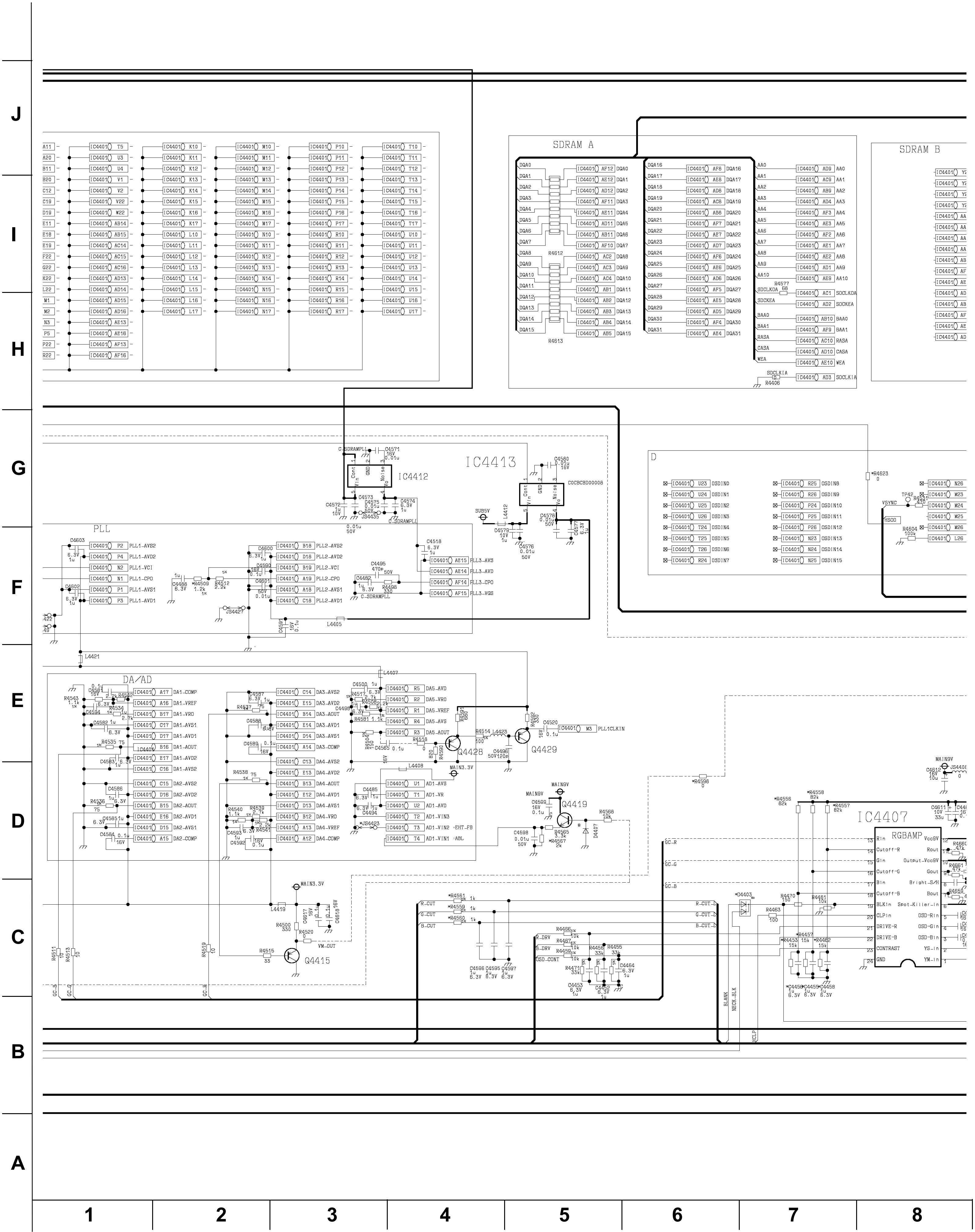
D
C
B
A
1
2
3
4
5
6
7
8
SUB5V
R4625 4.7k
Q4435
R4624 10k
C4447 50V 100p
ETC
MAIN3.3V
R4523 10k
R4401
NRST
LCDMODE
HFR
VPD
TEST
FBPIN
TRST
TMS
TCK
TDI
TDO
JTAG-TRST
JTAG-TMS
JTAG-TCK
TDO-FS-I
JTAG-TDO
JTAG-TDI
TP90
TP91
TP92
TP93
TP94
VSS
AAA-VDAF
OSD-CONT
R-DRV
B-DRV
R-CUT
G-CUT
B-CUT
HCLP
BLANK
ROE0
ROE1
ROE2 OSDCONT
ROE3 RDRV
ROE4 BDRV
ROE5 RCUT
ROE6 GCUT
ROE7 BCUT
ROE8 CLP
ROE9 BLANK
R4597 10k
BOE0
BOE1
BOE2
BOE3
BOE4
BOE5
BOE6 VSAW4
BOE7 VSAW3
BOE8 VSAW2
BOE9 VSAW1
HSOE
VSOE
CLKE
IC4401
IC4404
TC74HC221
FBP
D4402
D4401
R4431 100
R4423 1.8k
R4425 5.6k
C4435 6.3V 1u
C4436 50V 150p
MAIN9V
R4428 4.7k
R4429 4.7k
C4437 0.056u 16V
C4432 0.056u 16V
R4430 6.34k
C4438 470p 50V
C4433 3.3u
R4424 22k
C4434 16V 0.1u
R4596
R4595
IC4408
*R4620 3.3k
*C4615 50V 2700p
*R4619 3.3k
*R4618 0
*C4616 50V 82p
*R4622 47k
*R4621 4.7k
*Q4446
HP For H75K OSD
C4467 0.01u 16V
SUB5V
L4411
C4466 10V 1u
C4465 50V 0.01u
C4468 0.01u 50V
C4469 6.3V 1u
HCLP
PLL
C4603
PLL1-AVS2
PLL1-AVD2
PLL1-VCI
PLL1-CPO
PLL1-AVS1
PLL1-AVD1
C4493
R4516 470
R4510 2.2k
C4602
*JS4422
JS4449
L4421
C4488 6.3V
*R4509 1.2k
DA/AD
DA1-COMP
DA1-VREF
DA1-VRO
DA1-AVS1
DA1-AVD1
DA1-AOUT
DA1-AVD2
DA1-AVS2
DA2-AVS2
DA2-AVD2
DA2-AOUT
DA2-AVD1
DA2-AVS1
DA2-COMP
R4543 1.1k
C4581
R4534
C4594
C4582
R4535 75
C4583
C4586
R4536 75
C4585
C4584
R4511 10
R4513 10
R4519 10
GC-B
GC-G
GC-R
HFP
APC1
APC2
SGS1
SGS2
SDA-3
SCL-3
FAY
SDA-2
SCL-2
VPP
WP
140V-ON
DEG-SW/SUS3
MAIN-RELAY-ON
RM
KEYSCAN
KEYSCAN2
SYSCLK
LED
KEY3
FL4419
FL4442
FL4444
FL4439
FL4441
FL4443
FL4412
FL4426
FL4428
FL4422
FL4424
FL4427
FL4445
FL4446
FL4447
FL4449
*JS4421
AK-AV4-R
AK-AV4-L
AK-AV4-C
STB3.3V
DG4
DG3
*JS4457
C4529 0.1u 16V
C4530 0.01u 50V
L4437
TP6
STB7V
FL4425
SCL-1
SDA-1
FL4423
TP32
C4645 50V 100p
MAIN12V
JS4450
AK-AV4-S-DET
AK-AV4-Y
C
AK-AV4-V
ATSC-OSD & Conver-VP
FV-V

DG-BOARD 7/11 TNP2AA173AD CT-32HL44J/UJ


J
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G
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D
C
B
A
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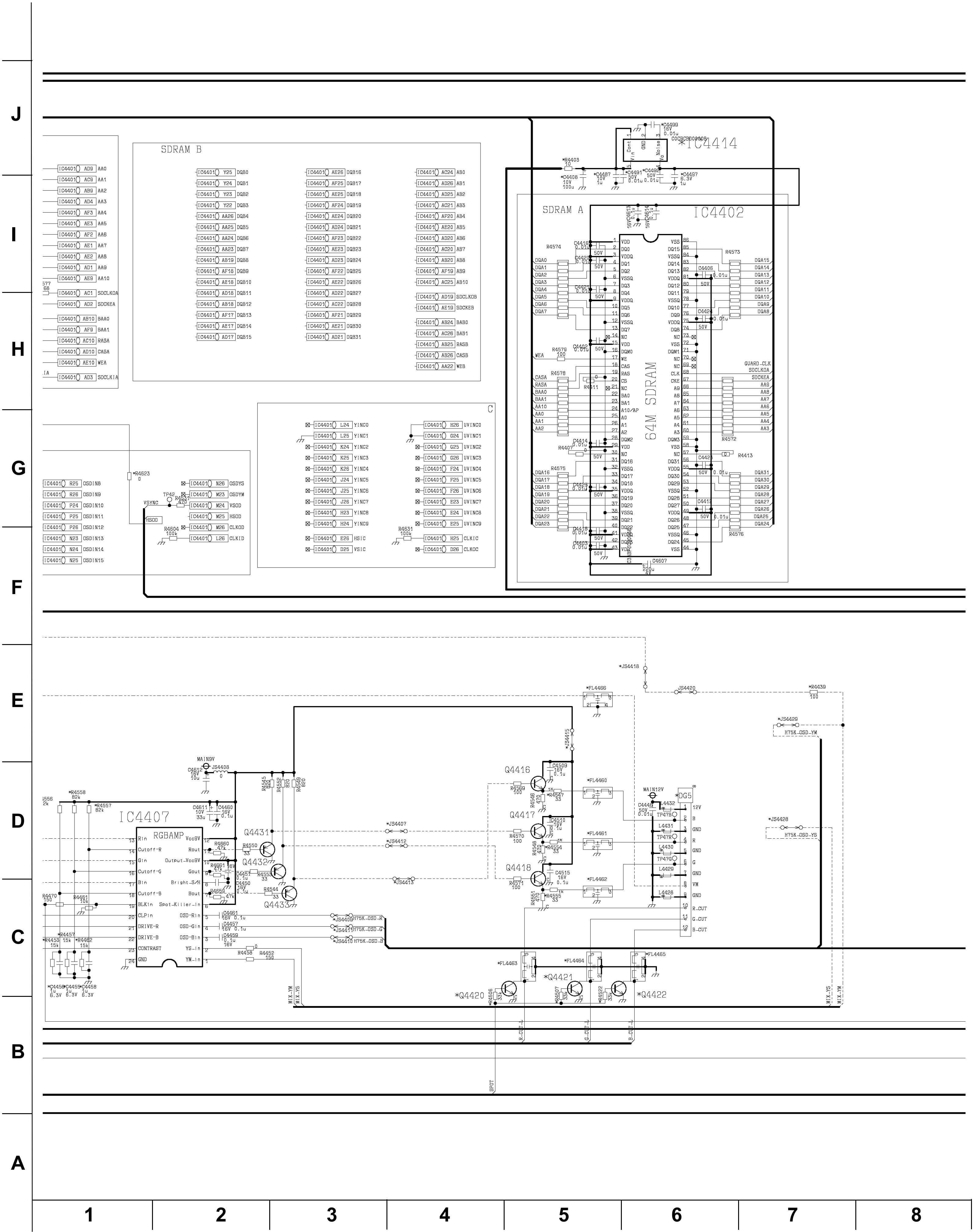
8
SDRAM A
SDRAM B
IC4413
IC4412
C0CBCBD00008
PLL
DA/AD
D
IC4407
RGBAMP
Q4415
Q4419
Q4428
Q4429
MAIN3.3V
MAIN9V
SUB5V
C_SDRAMPLL
VSYNC
GC-R
GC-G
GC-B
R-CUT
G-CUT
B-CUT
R-DRV
B-DRV
OSD-CONT
VM-OUT
BLANK
NECK-BLK
HCLP


SDRAM B
SDRAM A
IC4402
64M SDRAM
*IC4414
C0CBCBD00008
IC4407
RGBAMP
Q4416
Q4417
Q4418
Q4431
Q4432
Q4433
*Q4420
*Q4421
*Q4422
*DG5
MAIN9V
MAIN12V
*FL4460
*FL4461
*FL4462
*FL4463
*FL4464
*FL4465
*FL4466
H75K-OSD-YM
H75K-OSD-YS
H75K-OSD-R
H75K-OSD-G
H75K-OSD-B
MIX_YM
MIX_YS
R_CUT_L
G_CUT_L
B_CUT_L
SPOT
VSYNC
HSOD
TP42
J
I
H
G
F
E
D
C
B
A
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